



Texas A&M University

2019-2020

GRADUATE AND PROFESSIONAL CATALOG

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| HORT - Horticultural Sciences | 1644 | MXET - Multidiscip Engr Tech | 1753 |
| HPCH - Health Promo Comm Hlth | 1646 | NEXT - Neuro Exper Therapeutic | 1753 |
| HUMA - Humanities | 1648 | NFSC - Nutrition and Food Science | 1754 |
| IBST - Institute Biosci & Tech | 1648 | NRSC - Neuroscience | 1757 |
| IBUS - International Business | 1648 | NUEN - Nuclear Engineering | 1759 |
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| ISEN - Indust. & Systems Engr. | 1667 | OCNG - Oceanography | 1769 |
| ISTM - Mgmt Info Systems | 1671 | OMFP - Oral & Maxillofac Path | 1772 |
| ITAL - Italian | 1673 | OMFR - Oral & Maxillofac Radio | 1774 |
| ITDE - Interdisciplinary Engr. | 1673 | OMFS - Oral & Maxillofac Surg | 1776 |
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| LING -Linguistics | 1709 | PHAR - Pharmacy | 1792 |
| MARA - Maritime Administration | 1709 | PHEB - Public Hlth Epide Biost | 1802 |
| MARB - Marine Biology | 1711 | PHEO - Public Hlth Enviro Occu | 1805 |
| MARS - Marine Science | 1712 | PHIL - Philosophy | 1807 |
| MATH - Mathematics | 1715 | PHPM - Public Hlth Pol & Mgmt | 1809 |
| MCMD - Molecular Cell Medicine | 1718 | PHYS - Physics | 1813 |
| MEEN - Mechanical Engineering | 1719 | PLAN - Urban Planning | 1816 |
| MEID - Medicine-Interdisci | 1724 | PLPA - Plant Pathology | 1818 |

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| POLS - Political Science | 1820 | Marine Biology - MS | 90 |
| POSC - Poultry Science | 1823 | Marine Biology - PHD | 95 |
| PROS - Prosthodontics | 1824 | Marine Sciences | 1922 |
| PSAA - Public Service & Admin | 1828 | Marine Resources Management - MMRM | 1923 |
| PSYC - Psychology | 1833 | Maritime Business Administration | 1928 |
| RDNG - Reading | 1836 | Maritime Administration and Logistics - MMAL | 1928 |
| RENR Renewable Natural Resrces | 1837 | Texas A&M University at Qatar | 1933 |
| RPTS - Rec, Park & Tourism Sci | 1838 | General Information | 1936 |
| RUSS - Russian | 1840 | Qatar Engineering Programs | 1942 |
| SCEN - College of Science | 1840 | Chemical Engineering - MENG | 1942 |
| SCMT - Supply Chain Mgmt | 1840 | Chemical Engineering - MS | 1944 |
| SCSC - Soil and Crop Sciences | 1841 | Chemical Engineering - PhD | 1948 |
| SEFB - Special Ed. Field Based | 1844 | Appendices | 1955 |
| SENG - Safety Engineering | 1845 | Family Educational Rights and Privacy Act | 1955 |
| SOCI - Sociology | 1845 | Hazing Law Summary (Education Code) | 1956 |
| SOPH - School of Public Health | 1848 | International Agreements | 1957 |
| SPED - Special Education | 1848 | Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act) | 1960 |
| SPMT - Sport Management | 1850 | Notification for Students Pursuing an Occupational License | 1960 |
| SPSY - School Psychology | 1852 | Rules and Regulations for Determining Residence Status | 1961 |
| STAT - Statistics | 1853 | Index | 1962 |
| SURG - Surgery | 1856 | | |
| SYEN - Systems Engineering | 1863 | | |
| TAMU - TAMU Study Abroad/Consortium | 1863 | | |
| TCMT - Technical Management | 1863 | | |
| TEED - Teacher Education | 1864 | | |
| URSC - Urban Science | 1865 | | |
| VIBS - Vet Integrative Biosci. | 1865 | | |
| VIZA - Visualization | 1869 | | |
| VLCS Vet Large Animal Clin. Sc | 1872 | | |
| VMID - Vet Medicine-Interdisc. | 1873 | | |
| VPAR - Veterinary Parasitology | 1875 | | |
| VPAT - Veterinary Pathology | 1876 | | |
| VSCS Vet Small Animal Clin. Sc | 1877 | | |
| VTMI - Veterinary Microbiology | 1878 | | |
| VTPB - Veterinary Pathobiology | 1879 | | |
| VTPP - Vet Physiology & Pharm. | 1880 | | |
| WFSC Wildlife & Fisheries Sci. | 1883 | | |
| WGST - Women's & Gender Studies | 1885 | | |
| WMHS Water Mgmt & Hydrol. Sci. | 1886 | | |
| Texas A&M University at Galveston | 1888 | | |
| General Information | 1888 | | |
| Marine Biology | 1910 | | |

TEXAS A&M CATALOGS

Purpose of Catalogs

Purpose of Catalogs

The Undergraduate and Graduate and Professional catalogs provide information about the academic programs of Texas A&M University to students, prospective students, faculty and staff of the University. Included is information concerning admissions, academic regulations and requirements, services available to students, academic offerings and a list of the administrative officers and faculty of the University. While every effort has been made to make this catalog as complete and accurate as possible, changes may occur at any time in requirements, deadlines, fees, curricula and courses listed in these catalogs.

Students should refer to Howdy, for course offerings in any given semester. For administrative reasons, because of insufficient enrollment or because of limited resources, any given course might not be offered in the announced semester.

This catalog was prepared in advance of its effective date; therefore, the course descriptions may vary from actual course content. The provisions of the catalogs do not constitute a contract, express or implied, between any applicant, student, faculty or staff member of Texas A&M University or The Texas A&M University System. These catalogs are for informational purposes only. The University reserves the right to change or alter any statement herein without prior notice. Neither catalog should be interpreted to allow a student who begins his or her education under either catalog to continue the program under the provisions in that catalog.

Accreditation

Accreditation

Texas A&M University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award degrees at the bachelors', masters', doctoral and professional levels. Contact the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Texas A&M University.

College of Agriculture and Life Sciences

Agricultural Systems Management curriculum is recognized by the American Society of Agricultural and Biological Engineers (ASABE) (<http://www.asabe.org>).

Biological and Agricultural Engineering is accredited by the Accreditation Board for Engineering and Technology (ABET) (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

Biochemistry and Biophysics curriculum is accredited by the American Society for Biochemistry and Molecular Biology (ASBMB) (<http://www.asbmb.org>).

Didactic Program in Dietetics is accredited by the Commission on Accreditation for Dietetics Education (<https://www.cdrnet.org>).

Forestry curriculum is accredited by the Society of American Foresters (SAF) (<http://www.eforester.org>).

Food Science and Technology curriculum is approved by the Institute of Food Technologists (IFT) (<https://www.ift.org>).

Forensics and Investigative Sciences program is accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC) (<http://fepac-edu.org>).

Rangeland Ecology and Management curriculum is accredited by the Society for Range Management (SRM).

Recreation, Park and Tourism Sciences undergraduate curriculum is accredited by the National Recreation and Park Association (NRPA) (<http://www.nrpa.org>).

College of Architecture

Architecture is accredited by the National Architectural Accrediting Board (NAAB) (<http://www.naab.org>).

Construction Science curriculum is accredited by the American Council for Construction Education (ACCE) (<http://www.acce-hq.org>).

Landscape Architecture curriculum is accredited by the Landscape Architectural Accreditation Board (LAAB) (<https://www.asla.org/accreditationlaab.aspx>).

Urban and Regional Planning curriculum is accredited by the Planning Accreditation Board (PAB) (<http://www.planningaccreditationboard.org>).

Mays Business School

The baccalaureate and master's curricula in *Mays Business School* are accredited by the Association to Advance Collegiate Schools of Business (AACSB) (<http://www.aacsb.edu>).

College of Dentistry

Dentistry degree program is accredited by the Commission on Dental Accreditation (CODA) (<http://www.ada.org>).

College of Education and Human Development

Programs in professional education at Texas A&M University are approved and fully accredited by the State Board of Educator Certification and the Texas Education Agency (https://tea.texas.gov/About_TEA/Leadership/State_Board_for_Educator_Certification).

Counseling Psychology and *School Psychology* are accredited by the American Psychological Association (APA) (<http://www.apa.org>).

Athletic Training is accredited by the Commission on Accreditation of Athletic Training Education (CaATE) (<http://caate.net>).

College of Engineering

Undergraduate programs in *Aerospace, Biomedical, Chemical, Civil, Computer, Electrical, Industrial, Mechanical, Nuclear, Ocean, Petroleum, and Radiological Health Engineering* are accredited by the Engineering Accreditation Commission of ABET (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

Undergraduate programs in *Electronic Systems Engineering Technology, Manufacturing and Mechanical Engineering Technology, Manufacturing Engineering Technology, and Telecommunications Engineering Technology* are accredited by the Engineering Technology Accreditation Commission of ABET (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

The undergraduate program in *Computer Science Program* is accredited by the Computing Accreditation Commission of ABET (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

Bush School of Government and Public Service

The *Master of Public Service and Administration* degree in the Bush School of Government and Public Service is accredited by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA) (<https://accreditation.naspaa.org>)

The School of Law

The curriculum in the *School of Law* is accredited by the American Bar Association (ABA) (<http://www.americanbar.org/aba.html>).

College of Liberal Arts

Clinical Psychology is accredited by the American Psychological Association (APA) (<http://www.apa.org>).

College of Medicine

Medical Education degree program is accredited by the Liaison Committee on Medical Education (LCME) (<http://lcme.org>).

College of Nursing

The baccalaureate and master's degree programs in nursing at Texas A&M University College of Nursing are accredited by the Commission on Collegiate Nursing Education (<http://www.ccneaccreditation.org>), 655 K Street, NW, Suite 750, Washington, DC 20001, 202-887-6791.

Irma Lerma Rangel College of Pharmacology

The curriculum in the *Irma Lerma Rangel College of Pharmacy* is accredited by the Accreditation Council for Pharmacy Education (ACPE). (<https://www.acpe-accredit.org>)

School of Public Health

Public Health degree program is accredited by the Council on Education for Public Health (CEPH) (<https://ceph.org>).

The *Master of Health Administration* is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME) (<https://cahme.org/healthcare-management-education-accreditation/students/search-for-an-accredited-program>).

College of Science

The undergraduate program in *Chemistry* is accredited by the American Chemical Society (ACS) (<https://www.acs.org/content/acs/en.html>).

College of Veterinary Medicine and Biomedical Sciences

Veterinary Medicine degree program is accredited by the American Veterinary Medical Association Council on Education (AVMA) (<https://www.avma.org/Pages/home.aspx>).

Texas A&M University at Galveston

The undergraduate program in *Offshore and Coastal Systems Engineering* is accredited by the Engineering Accreditation Commission of ABET (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

The undergraduate program in *Marine Engineering Technology* is accredited by the Engineering Technology Accreditation Commission of ABET (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

Texas A&M University at Qatar

Undergraduate programs in *Chemical, Electrical, Mechanical, and Petroleum* are accredited by the Engineering Accreditation Commission of ABET (<http://main.abet.org/aps/Accreditedprogramsearch.aspx>).

GRADUATE AND PROFESSIONAL CATALOG

The Texas A&M University Graduate and Professional Catalog, published annually, provides information about the graduate and professional studies programs of Texas A&M University to students, prospective students, and faculty and staff of the university. Included is information concerning requirements for admission to graduate and professional studies at the university, services available to students, graduate and professional course offerings and listings of the administrative officers and the graduate faculty.

Publication

Publication Statement

The Texas A&M University Graduate and Professional Catalog is published each spring and the provisions for this volume are applicable during the 2019-2020 academic year. A student who registers for the first time at the University during a summer session is subject to the degree requirements set forth in the catalog effective for the fall semester immediately following his or her initial enrollment.

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ACADEMIC CALENDARS

Texas A&M University and Galveston

Texas A&M University and Texas A&M University at Galveston Calendar

All dates are subject to change.

2019 Fall Semester

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| August 14 | Graduation application opens for all students planning to graduate in December 2019. |
| August 23 | Last day to register for fall semester classes. Refer to https://sbs.tamu.edu/billing-payments/due-dates (https://sbs.tamu.edu/billing-payments/due-dates/) for tuition and fee due dates, 5 p.m. Tuition and Fees payment due date. |
| August 26 | First day of fall semester classes. |
| September 2 | Last day for adding/dropping courses for the fall semester, 5 p.m.* |
| September 10 | Fall official census date. |
| September 27 | Last day to apply for all degrees to be awarded in December without a late fee. |
| September 30 | Undergraduate degree plan approval deadline. |
| October 14 | Mid-semester grades due, noon. |
| November 7 - 22 | Preregistration for 2020 spring semester. |
| November 15 | Last day for all students to drop courses with no penalty (Q-drop), 5 p.m. Last day to change Kinesiology 198/199 grade type for fall 2019, 5 p.m. Last day to officially withdraw from the University, 5 p.m. |
| November 18 | Bonfire 1999 Remembrance Day. |
| November 27 | Reading day, no classes. |
| November 28-29 | Thanksgiving holiday. |
| December 2 | Redefined day, students attend their Friday classes. Does not apply to programs offered by the College of Nursing. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08 (http://student-rules.tamu.edu/rule08/)), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| December 3 | Redefined day, students attend their Thursday classes. Does not apply to programs offered by the College of Nursing. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08 (http://student-rules.tamu.edu/rule08/)), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| December 4 | Last day of fall semester classes. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08 (http://student-rules.tamu.edu/rule08/)), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. Last day to apply for all degrees to be awarded in December. |

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| December 5 | Reading day, no classes. |
| December 6, 9-11 | Fall semester final examinations for all students. |
| December 7 | Doctoral Commencement and Hooding Ceremony in College Station. |
| December 12 | Grades due for degree candidates, 6 p.m. |
| December 13 | Last day for December undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| December 13-14 | Commencement and Commissioning-Bachelor's and Master's Degrees in College Station. |
| December 14 | Commencement and Commissioning-All Degrees in Galveston. |
| December 16 | Final grades for all students due, noon. |
| December 23 - January 1 | Faculty and Staff holidays. |

*Adjusted to accommodate University event.

2020 Spring Semester

| | |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| January 8 | Graduation application opens for all students planning to graduate in May 2020. |
| January 10 | Last day to register for spring semester classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates (https://sbs.tamu.edu/billing-payments/due-dates/) for tuition and fee due dates. |
| January 13 | First day of Spring semester classes. |
| January 17 | Last day for adding/dropping courses for the spring semester, 5 p.m. |
| January 20 | Martin Luther King Jr. Day. Faculty and Staff holiday. |
| January 29 | Spring official census date. |
| February 14 | Last day to apply for degrees to be awarded in May without a late fee. |
| March 2 | Mid-semester grades due, noon. |
| March 9-13 | Spring break. |
| March 11-13 | Faculty and Staff holiday. |
| April 2-17 | Preregistration for the 2020 first term, second term, 10-week summer semester and fall semester. |
| April 10 | Reading day, no classes. |
| April 14 | Last day for all students to drop courses with no penalty (Q-drop), 5 p.m. Last day to change Kinesiology 198/199 grade type for spring 2020, 5 p.m. Last day to officially withdraw from the University, 5 p.m. |
| April 21 | Muster. Campus ceremony. |
| April 27 | Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08 (http://student-rules.tamu.edu/rule08/)), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| April 28 | Last day of spring semester classes. |

Redefined day, students attend their Friday classes. Does not apply to programs offered by the College of Nursing. Pursuant to Student Rule 8.3 (<http://student-rules.tamu.edu/rule08> (<http://student-rules.tamu.edu/rule08/>)), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes.

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| | Last day to apply for all degrees to be awarded in May. |
| April 29 | Reading day, no classes. |
| April 30 - May 1, May 4-5 | Spring semester final examinations for all students. |
| May 2 | Doctoral Commencement and Hooding Ceremony in College Station. |
| May 6 | Grades for degree candidates due, 6 p.m. |
| May 7-9 | Commencement and Commissioning-Bachelor's and Master's Degrees in College Station. |
| May 8 | Last day for May undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| May 9 | Commencement and Commissioning-All Degrees in Galveston. |
| May 11 | Final grades for all students due, noon. |

2020 Summer Term I

| | |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 13 | Graduation application opens for all students planning to graduate in August 2020. |
| May 22 | Last day to register for first term and 10-week semester classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates (https://sbs.tamu.edu/billing-payments/due-dates/) for tuition and fee due dates. |
| May 25 | Memorial Day. Faculty and Staff holiday. |
| May 26 | First day of Summer I term classes. |
| May 29 | Last day for adding/dropping for the first term and the 10-week semester, 5 p.m. |
| | Official census date for first term and 10-week semester, 5 p.m. |
| June 15 | Last day for all students to drop courses with no penalty for the first term (Q-drop), 5 p.m. |
| | Last day to change Kinesiology 198/199 grade type for first term, 5 p.m. |
| | Last day to officially withdraw from the University for first term, 5 p.m. |
| June 26 | Last day of first term classes. |
| June 29 | First term final examinations. |
| | Last day to register for the second term classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates (https://sbs.tamu.edu/billing-payments/due-dates/) for tuition and fee due dates. |

2020 Summer Term II

| | |
|---------|------------------------------------------------------------------------------------|
| May 13 | Graduation application opens for all students planning to graduate in August 2020. |
| June 30 | First day of second term classes. |
| July 3 | Last day for adding/dropping courses for the second term, 5 p.m. |

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|------------|--------------------------------------------------------------------------------------------------|
| | Last day to apply for degrees to be awarded in August without a late fee, 5 p.m. |
| | Official census date for second term. |
| July 14 | Last day to Q Drop or officially withdraw from the University for 10-week semester. |
| July 20 | Last day for all students to drop courses with no penalty (Q-drop) for the second term, 5 p.m. |
| | Last day to change Kinesiology 198/199 grade type for second term, 5 p.m. |
| | Last day to officially withdraw from the University for second term, 5 p.m. |
| August 1 | Doctoral Commencement and Hooding Ceremony in College Station. |
| August 3 | Last day of second term and 10-week semester classes. |
| | Last day to apply for all degrees to be awarded in August. |
| August 4-5 | Second term and 10-week semester final examinations for all students. |
| August 6 | Grades due for degree candidates, noon. |
| August 7 | Last day for August undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| August 7-8 | Commencement and Commissioning-Bachelor's and Master's Degrees in College Station. |
| August 8 | Commencement and Commissioning-All Degrees in Galveston. |
| August 10 | Final grades for second term and 10-week semester due, noon. |
| | Grades will be available for viewing in Howdy after 5 p.m. |

2020 10-Week Summer Semester

| | |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 13 | Graduation application opens for all students planning to graduate in August 2020. |
| May 22 | Last day to register for first term and 10-week semester classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates (https://sbs.tamu.edu/billing-payments/due-dates/) for tuition and fee due dates. |
| May 25 | Faculty and Staff holiday. |
| May 26 | First day of first term and 10-week semester classes. |
| May 29 | Last day for adding/dropping for the first term and the 10-week semester, 5 p.m. |
| | Official census date for first term and 10-week semester, 5 p.m. |
| June 29 | No 10-week semester classes. |
| July 3 | Last day to apply for degrees to be awarded in August without a late fee. |
| July 14 | Last day for all students to drop courses with no penalty (Q-drop) for the 10-week semester, 5 p.m. |
| | Last day to officially withdraw from the University for 10-week semester, 5 p.m. |
| August 1 | Doctoral Commencement and Hooding Ceremony in College Station. |
| August 3 | Last day of second term and 10-week semester classes. |

| | |
|------------|--------------------------------------------------------------------------------------------------|
| | Last day to apply for all degrees to be awarded in August. |
| August 4-5 | Second term and 10-week semester final examinations for all students. |
| August 6 | Grades due for degree candidates, noon. |
| August 7 | Last day for August undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| August 7-8 | Commencement and Commissioning-Bachelor's and Master's Degrees in College Station. |
| August 8 | Commencement and Commissioning-All Degrees in Galveston. |
| August 10 | Final grades for second term and 10-week semester due, noon. |

College of Veterinary Medicine and Biomedical Sciences Academic Calendar 2019 Fall Semester

| | |
|----------------|--------------------------------------------------------------|
| August 19 | First day of fall semester classes. (1VM, 2VM, 3VM students) |
| November 28-29 | Thanksgiving holiday. (1VM, 2VM, 3VM students) |
| November 29 | Last day of Fall semester classes. (1VM, 2VM, 3VM students) |
| December 2-6 | Fall semester final examinations. (1VM, 2VM, 3VM students) |

2020 Spring Semester

| | |
|----------------|----------------------------------------------------------------|
| January 6 | First day of Spring semester classes. (1VM, 2VM, 3VM students) |
| January 20 | Martin Luther King, Jr., Day holiday. (1VM, 2VM, 3VM students) |
| March 9-13 | Spring break. (1VM, 2VM, 3VM students) |
| April 24 | Last day of spring semester classes. (1VM, 2VM, 3VM students) |
| April 27-May 1 | Spring semester final examinations. (1VM, 2VM, 3VM students) |
| May 4 | First day of 2020-2021 clinical year. (4VM) |
| May 6 | Doctor of Veterinary Medicine Commencement. |

All dates are subject to change.

Dentistry

College of Dentistry Calendar

All dates are subject to change.

2019

| | |
|------------|------------------------------------------------------------------------|
| June 3 | SUMMER SESSION BEGINS (D2, D3, D4, DH Sr.) |
| June 4 | QA/RM Program (D3-D4 & DH Sr.) - Clinics Closed From 1:00 PM - 4:00 PM |
| June 27-28 | New Graduate Student Orientation |
| July 1 | SUMMER GRADUATE SESSION BEGINS (All graduate students) |
| July 2 | Graduate Core Courses Begin |
| July 4 | Thursday, Independence Day Holiday |
| July 12 | SUMMER SESSION ENDS (D2) |

| | |
|----------------|-----------------------------------------------------------------------------|
| July 26 | SUMMER SESSION ENDS (D3, D4, DH Sr.) |
| July 30 | Summer Session Grades Due By 12:00 NOON - Dental and Dental Hygiene courses |
| August 5-7 | Orientation, Fall Semester, First-Year Dental and Dental Hygiene Students |
| August 9 | Second Year Dental DDS Instrument Distribution (ATTENDANCE MANDATORY) |
| | SUMMER GRADUATE SESSION ENDS (All graduate students) |
| August 12 | FALL SEMESTER BEGINS (All students) |
| August 13 | Summer Graduate Grades Due By 12:00 NOON |
| September 2 | Labor Day, Holiday |
| November 25-29 | Fall Semester Recess |
| November 28 | Thanksgiving Day, Holiday |
| December 6 | FALL SEMESTER INSTRUCTION ENDS (D1, D2, D3, D4, DH Jr., DH Sr.) |
| December 9-13 | Fall Semester Examination Period |
| December 13 | FALL GRADUATE SEMESTER ENDS (All graduate students) |
| | Holiday Recess Begins |
| December 14 | Award MS and PhD Degrees |
| December 25 | Christmas Day, Holiday |

2020

| | |
|--------------|------------------------------------------------------------------------------------------------------------------------|
| January 1 | New Year's Day, Holiday |
| January 3 | Fall Semester Grades Due By 12:00 NOON |
| January 6 | SPRING SEMESTER BEGINS (All students) |
| January 20 | Martin Luther King, Jr. Day, Holiday |
| February 3-4 | MOCK BOARDS – Fourth-Year Dental, D2 assists |
| March 16-20 | Spring Semester Recess |
| April 1 | Scholars Day – Clinic closed for DDS/DH |
| April 24-27 | WREB Exam – Fourth Year and Senior Dental Hygiene |
| May 8 | Grades due for graduating students by 12:00 noon |
| | SPRING SEMESTER INSTRUCTION ENDS (DDS and DH students) |
| May 11-15 | Spring Semester Examination Period (Except Graduating Students) |
| May 13 | Graduation Announcement for Graduating Students |
| May 15 | GRADUATE SEMESTER ENDS (All graduate students) |
| May 19 | Spring Semester Grades Due for all Other Students by 12:00 NOON |
| May 21 | AWARDS CEREMONY |
| May 22 | GRADUATION EXERCISE |
| May 25 | Memorial Day holiday |
| | NOTE: Graduate specialty students clinical rotations continue between academic terms with no change in student status. |
| June 1 | SUMMER SESSION BEGINS (D2, D3, D4, DH Sr.) |
| June 2 | QA/RM Program (D3-D4 & DH Sr.) - Clinics Closed From 1:00 PM - 4:00 PM |
| June 25-26 | New Graduate Student Orientation |
| June 29 | SUMMER GRADUATE SESSION BEGINS (graduate students) |

| | |
|------------|-----------------------------------------------------------------------------|
| June 30 | Graduate Core Courses Begin |
| July 6 | Independence Day, Holiday |
| July 24 | SUMMER SESSION ENDS (D2, D3, D4, DH Sr.) |
| July 28 | Summer Session Grades Due By 12:00 NOON - Dental and Dental Hygiene courses |
| August 3-5 | Orientation, Fall Semester, First-Year Dental and Dental Hygiene Students |
| August 6 | First-Year Dental Student Instrument Distribution (ATTENDANCE MANDATORY) |
| August 7 | Second-Year Dental Instrument Distribution (ATTENDANCE MANDATORY) |
| | SUMMER GRADUATE SESSION ENDS (graduate students) |
| August 11 | Summer Graduate Grades Due By 12:00 NOON |

NOTE: Graduate specialty students clinical rotations continue between academic terms with no change in student status.

Law

School of Law Academic Calendar

All dates are subject to change.

2019* Fall Semester

| | |
|----------------|--------------------------------------------------------------------------------------------------------------------------------|
| August 14 | Graduation application open in Howdy for all students planning to graduate in December 2019. |
| August 19 | Orientation begins. |
| August 26 | Classes begin for JD and all graduate programs. |
| August 30 | Last day to add a course for JD and all graduate programs. |
| August 30 | Timely postmark deadline with the Texas Board of Law Examiners for the February Bar examination. |
| September 2 | Labor Day holiday. |
| September 6 | Last day to elect pass/fail option for JD classes. Last day to drop a course for JD and all graduate programs. |
| September 27 | Last day to apply for a December 2019 degree without a late fee. |
| October 1 | Timely deadline for first-year JD students to file a Declaration of Intent to Study Law with the Texas Board of Law Examiners. |
| October 14-18 | Fall break for JD, Fort Worth resident graduate program, and San Antonio graduate program. |
| November 4-8 | Priority registration for winter 2020 and spring 2020. |
| November 25 | Last day of classes for JD and Fort Worth resident graduate program. Make-up for Labor Day. |
| November 25-29 | Thanksgiving holiday for San Antonio graduate program. |
| November 26-27 | Make-up days for inclement weather if needed for JD and Fort Worth resident graduate program. |
| November 28-29 | Thanksgiving holiday for JD and Fort Worth resident graduate program. |
| December 2 | Last day of classes for San Antonio graduate program. |
| December 3-4 | Make-up days for inclement weather if needed for San Antonio graduate program. |
| December 3-13 | Final exams for JD classes and Fort Worth resident graduate program. |

| | |
|----------------|------------------------------------------------------------|
| December 4 | Last day to apply for December degree. |
| December 5-13 | Final exams for San Antonio graduate program. |
| December 11 | Last day of class for distance education graduate program. |
| December 12-14 | Final exams for distance education graduate program. |
| December 13 | Designated fall 2019 graduation date. |

2020* Winter Session

| | |
|--------------|----------------------------------------|
| November 4-8 | Priority registration for Winter 2020. |
| January 3 | Last day to add or drop a class. |
| January 6 | Classes begin. |
| January 7 | Last day to elect pass/fail option. |
| January 11 | Last day of classes. |

2020* Spring Semester

| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| January 8 | Graduation application opens in Howdy for all students planning to graduate in May 2020. |
| January 13 | Classes begin for JD and all graduate programs. |
| January 17 | Last day to add a course for JD and all graduate programs. |
| January 20 | Martin Luther King, Jr., Day holiday. |
| January 24 | Last day to elect pass/fail option for JD classes. Last day to drop a course for JD and all graduate programs. |
| January 30 | Timely postmark deadline with the Texas Board of Law Examiners for the July Bar examination. |
| February 14 | Last day to apply for May degree without a late fee. |
| March 9-13 | Spring Break for JD, Fort Worth resident graduate program, and San Antonio graduate program. |
| March 30 - April 3 | Priority registration for summer 2020 and fall 2020. |
| April 10 | No classes. |
| April 13 | Last day of classes for JD and resident graduate programs. (Make up day for Martin Luther King, Jr., Day holiday). |
| April 14 | Make-up day for Friday classes for JD classes, Fort Worth resident graduate program and San Antonio graduate program (make-up for Good Friday). |
| April 15-16 | Make-up days for inclement weather if needed for JD classes, Fort Worth resident graduate program and San Antonio graduate program. |
| April 20-30 | Final exams for JD classes, Fort Worth resident graduate program and San Antonio graduate program. |
| April 30 | Last day to apply for May degree. |
| May 1 | Hooding and Commencement. |
| May 7 | Last day of class for distance education graduate program. |
| May 8-10 | Final exams for distance education graduate program. |
| May 7 | Designated Spring 2020 graduation date. |

2020* Summer Session

| | |
|--------|--------------------------------------------------------------------------------------------|
| May 13 | Graduation application open in Howdy for all students planning to graduate in summer 2020. |
| May 18 | Classes begin for JD and graduate programs. |
| May 20 | Last day to add a course. |
| May 22 | Last day to elect pass/fail option. |
| May 25 | Memorial Day holiday. |

| | |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 29 | Last day to drop a course |
| | Classes held in lieu of May 25 classes |
| July 3 | Last day of class for JD and resident graduate programs. |
| | Last day to apply for degrees awarded summer 2020 without a late fee. |
| July 8 | Last day of class for distance education graduate program. |
| July 8-11 | Final exams for JD classes and all graduate programs. |
| August 3 | Last day to apply for degrees awarded summer 2020. |
| August 7** | Designated summer 2020 JD graduation date. |
| | *all dates and times subject to change |
| | ** please be aware that for a student who has taken and passed the February bar exam and graduates in the summer term, this date could delay their swearing in. |

Medicine

College of Medicine Academic Calendar

All dates are subject to change.

2019 Fall Semester

| | |
|----------------|---------------------------------|
| July 8 | M3-M4 First day of Fall class. |
| July 29 | M1-M2 First day of Fall class. |
| November 28-29 | M1-M3 Thanksgiving holiday. |
| December 20 | M1-M3 last day of Fall classes. |
| December 31 | M4 Last day of Fall classes. |

2020 Spring Semester

| | |
|------------|----------------------------------------|
| January 1 | M4 First day of Spring classes. |
| January 6 | M1 and M3 First Day of Spring Classes. |
| January 13 | M2 First day of Spring classes. |
| January 20 | M1 Martin Luther King, Jr. Day. |
| March 9-13 | M1-M3 Spring Break. |
| May 8 | M4 Last day of Spring classes. |
| May 16 | Commencement and Commissioning. |
| May 25 | M1 Memorial Day. |
| June 19 | M1 Last day of Spring classes. |
| July 3 | M2-M3 Last day of Spring classes. |

2020 Summer Session*

* Summer 2020 is included within the two-semester model.

Pharmacy

Irma Lerma Rangel College of Pharmacy Academic Calendar

All dates are subject to change.

2019 Fall Semester

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| May 31 | Pre-orientation for the Class of 2023 (P1 students). |
| August 2 | Last day to register for fall semester classes, 5 p.m. Refer to http://finance.tamu.edu/sbs (http://finance.tamu.edu/sbs/) for tuition and fee payment deadlines. Also check the "My Finances" tab on Howdy and watch for emails from the Office of Student Affairs (P2 students). |
| August 5 | General Orientation (P1 students). |
| August 5 | First day of Fall semester classes (P2 students). |
| August 9 | Last day to register for fall semester classes, 5 p.m. Refer to http://finance.tamu.edu/sbs (http://finance.tamu.edu/sbs/) for tuition and fee payment deadlines. Also check the "My Finances" tab on Howdy and watch for emails from the Office of Student Affairs (P1, P3 and P4 students). |
| August 9 | Last day for adding/dropping courses for the fall semester, 5 p.m. (P2 students). |
| August 12 | First day of fall semester classes (P1, P3 and P4 students). |
| | First day of rotation block 3 (P4 students). |
| August 16 | Last day for adding/dropping courses for the fall semester, 5 p.m. (P1, P3 and P4 students). |
| August 20 | Fall official census date (P2 students). |
| August 27 | Fall official census date (P1, P3 and P4 students). |
| September 20 | Last day of rotation block 3 (P4 students). |
| September 23 | First day of rotation block 4 (P4 students). |
| November 1 | Last day of rotation block 4 (P4 students). |
| November 4 | First day of rotation block 5 (P4 students). |
| November 7 | Registration for the Spring 2020 semester opens. Watch for a registration email from the Office of Student Affairs (P1, P2, P3 and P4 students). |
| November 18 | Bonfire 1999 Remembrance Day. |
| November 27 | Last full day of fall semester classes (P1, P2, and P3 students). |
| November 28-29 | Thanksgiving holiday. |
| December 2-13 | Final examinations for fall semester classes (P1, P2, and P3 students). |
| December 13 | Last full day of rotation block 5 (P4 students). |
| December 19 | Final grades due for fall semester classes, noon (P1, P2, P3 and P4 students). |
| December 23 - January 1 | Faculty and staff holiday. |

2020 Spring Semester

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| January 2 | Last day to register for Spring semester classes by 5 p.m. Refer to http://finance.tamu.edu/sbs (http://finance.tamu.edu/sbs/) for tuition and fee payment deadlines. Also check the "My Finances" tab on Howdy (P2 and P3 students). |
| January 6 | First day of spring semester classes. (P2 and P3 students). |
| | First day of rotation block 6 (P4 students). |
| January 9 | Graduation application opens (P4 students). |

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| January 10 | Last day to register for spring semester classes, 5 p.m. Refer to http://finance.tamu.edu/sbs (http://finance.tamu.edu/sbs/) for tuition and fee payment deadlines. Also check the "My Finances" tab on Howdy and watch for emails from the Office of Student Affairs (P1 and P4 students). |
| January 10 | Last day for adding/dropping courses for the spring semester, 5 p.m. (P2 and P3 students). |
| January 13 | First day of spring semester classes. (P1 and P4 students). |
| January 17 | Last day for adding/dropping courses for the spring semester, 5 p.m. (P1 and P4 students). |
| January 20 | Martin Luther King, Jr. Day. Faculty and staff holiday (P1, P2 and P3 students). |
| January 22 | Spring official census date (P2 and P3 students). |
| January 29 | Spring official census date (P1 and P4 students). |
| January 27 - 31 | Mini clinical rotation (P3 students). |
| February 14 | Last day of rotation block 6 (P4 students). |
| February 17 | First day of rotation block 7 (P4 students). |
| March 9-13 | Spring break (P1, P2, P3 students). |
| March 11-13 | Faculty and Staff holiday. |
| March 27 | Last day of rotation block 7 (P4 students). |
| March 30 | First day of rotation block 8 (P4 students). |
| April 1 | Registration for the Fall 2020 semester opens. Watch for a registration email from the Office of Student Affairs. |
| May 1 | Last full day of spring semester classes (P1, P2 and P3 students). |
| May 4 - 15 | Final examination for spring semester classes P1, P2 and P3 students). |
| May 8 | Last full day of rotation block 8 (P4 students). |
| May 20 | Final grades due for spring semester classes, noon (P1, P2, P3 and P4 students). |
| May 23 | Commencement (P4 students). |

2020 Summer Session

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| May 21 | (P1, P2, P3 and P4 students). Last day for adding/dropping for the first term (block 1) and summer semester (blocks 1 and 2), 5 p.m. Last day for adding/dropping for the first term and 10-week semester classes, 5 p.m. |
| | Official census date for first term, summer semester and 10-week semester classes. |
| May 22 | Last day to register for first term, 10-week semester and summer semester classes, 5 p.m. Refer to http://finance.tamu.edu/sbs (http://finance.tamu.edu/sbs/) for tuition and fee payment deadlines. Also check the "My Finances" tab on Howdy and watch for emails from the Office of Student Affairs, (P1, P2, P3 and P4 students). |
| May 25 | First day of rotation block 1 (P4 students). |
| May 25 | Memorial Day. Faculty and staff holiday. |
| May 26 | First day of first term and 10-week semester classes. |
| June 26 | Last day of first term classes (P1, P2 and P3 students). |

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| June 30 | First day of second term classes (P1, P2 and P3 students). |
| July 6 | First day of rotation block 2 (P4 students) |
| August 3 | Last day of second term and 10-week semester classes (P1, P2 and P3 students). |
| August 6 | Final grades due for second term and 10-week semester classes, noon (P1, P2, and P3 students). |
| August 14 | Last day of rotation block 2 (P4 students). |
| August 19 | Final grades due for summer semester classes, noon (experiential) (P4 students). |

Qatar

Texas A&M University at Qatar Calendar

All dates are subject to change.

Fall Semester 2019*

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| August 20-22 | AGGIE LIFE 101 (required for all new students) |
| August 26 | First day of Fall classes. First day to apply for December graduation |
| September 1 | Last day for adding/dropping courses with no record for the fall semester, 4:30 p.m. |
| September 10 | Official census date (12th class day) Last day to change or add Major/Minor for fall, 4:30 p.m. |
| September 26 | Last day to apply for December graduation, 4:30 p.m. |
| September 30 | Undergraduate degree plan approval deadline |
| October 13-17 | Fall Break (No classes. Offices remain open) |
| October 24 | Mid-semester grades due by noon, Office of Records |
| November 18 | Bonfire 1999 Remembrance Day |
| November 24 | Last day for all students to drop courses with no academic penalty (Q-drop), 4:30 p.m. Last day to officially withdraw from the University, 4:30 p.m. |
| December 8 | Last day of fall semester classes Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08) (http://student-rules.tamu.edu/rule08/), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| December 9 | Reading day (no classes or finals) |
| December 10-12, December 15 | Fall semester final examinations for all students |
| December 16 | Final grades due for all students by 6:00pm, Office of Records |
| December 18 | Qatar National Day (offices closed) |
| December 19 | Semester break (offices closed)* |
| December 22-26 | Semester break (offices closed)* |

*All dates are subject to change.

^Dates for the Eid holidays are subject to change; however, the University will be closed for a three-day period during each Eid.

Spring Semester 2020*

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| December 29 | Offices reopen after semester break |
| January 12 | First day of spring classes |

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| | First day to apply for May graduation |
| January 16 | Last day for adding/dropping courses with no record for the spring semester, 4:30 p.m. |
| January 27 | Official census date (12th class day) |
| | Last day to change or add Major/Minor for spring, 4:30p.m. |
| February 11 | Qatar National Sports Day (offices closed/no classes) |
| February 13 | Last day to apply for May graduation, 4:30 p.m. |
| March 1-5 | Spring break (no classes) |
| March 8 | Spring semester classes resume |
| March 12 | Mid-semester grades due by noon, Office of Records |
| April 12 | Last day for all students to drop courses with no academic penalty (Q-drop), 4:30 p.m. |
| | Last day to officially withdraw from the University, 4:30 p.m. |
| April 21 | Aggie Muster |
| April 23 | Projected first day of Ramadan* |
| April 26 | Last day of spring semester classes |
| | Redefined Day – Tuesday classes to be held |
| | Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08 (http://student-rules.tamu.edu/rule08/)), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes |
| April 27-28 | Reading day (no classes or finals) |
| April 29-30 | Spring semester final examinations |
| May 3-4 | Spring semester final examinations |
| May 5 | Qatar Foundation Convocation* |
| May 5 | Final grades due for degree candidates by 6:00p.m., Office of Records |
| May 7 | Commencement Ceremony |
| May 8 | Final grades due for all non-degree candidates by noon, Office of Records |

*Dates for the Eid holidays are subject to change; however, the University will be closed for a three-day period during each Eid.

* All dates are subject to change.

Summer Semester 2020*

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| May 23 | Projected first day of Eid Al-Fitr** |
| May 24-26 | Eid Al-Fitr (offices expected to be closed)** |
| May 31 | First day of summer classes |
| | First day to apply for summer graduation |
| June 3 | Official census date (4th class day) |
| | Last day for adding/dropping courses with no record for the summer semester, 4:30 p.m. |
| June 18 | Last day to apply for summer graduation, 4:30 p.m. |
| July 2 | Last day for all students to drop courses with no academic penalty (Q-drop), 4:30 p.m. |
| | Last day to officially withdraw from the University, 4:30 p.m. |
| July 4 | United States Independence Day |
| July 16 | Last day of Summer classes |
| July 19-20 | Final examinations for Summer term |
| July 22 | Final grades due for summer term by noon, Office of Records |

*All dates are subject to change.

ACADEMIC EXPECTATIONS AND PROGRAM REQUIREMENTS

- Academic Expectations (p. 20)
- Certificate Requirements (p. 21)
- Degree Requirements (p. 21)
- Registration and Academic Status (p. 27)

Academic Expectations

Expectations for Graduate and Professional Study

The major goals of graduate education at Texas A&M are to instill in each student an understanding of and a capacity for scholarship, independent judgment, academic rigor and intellectual honesty. Faculty and graduate students have a shared obligation to work together to foster these goals through relationships that advance freedom of inquiry, demonstrate individual and professional integrity, and encourage common respect.

Graduate student progress is guided and evaluated by an advisor and a graduate committee. These individuals give direction and support for the appropriate developmental and learning goals of a graduate student. The advisor and the graduate committee also have the obligation of evaluating a graduate student's academic performance. The graduate student, the advisor and the graduate committee constitute the basic core of graduate education. The quality, scope and extent of interaction in this group determines the significance of the graduate experience.

High quality graduate education requires professional and ethical conduct of the participants. Faculty and graduate students have mutual responsibilities in ensuring academic standards and quality graduate programs. Excellence in graduate education is achieved when faculty and students are inspired, have the academic and professional backgrounds essential to function at the highest level, and are genuine in their mutual desire to see one another succeed. Any action that negatively affects this interaction—from either faculty member or student—destroys the whole relationship. Mutual respect is critical to the successful process.

The requirements set forth in this catalog are defined as minimum University requirements. Departments, Colleges, and Interdisciplinary Degree Programs may opt to establish higher standards and/or additional requirements.

Student Responsibility

Each student has a responsibility to:

1. Know specific degree requirements as established by the University or the student's department, college, or interdisciplinary degree program.
2. Enroll in the appropriate coursework to complete the degree plan.
3. Maintain the appropriate standards to continue in graduate studies.
4. Know steps and deadlines related to graduation.
5. Be acquainted with the Texas A&M University Student Rules (refer to the website <http://student-rules.tamu.edu>).

Information about general degree requirements is available in this catalog. Specific degree requirements and procedural guidelines are available from the departmental graduate advisor(s).

Scholastic Requirements

Unless otherwise stated, students in graduate degree programs and post-baccalaureate non-degree students (G6 classification) must maintain a 3.000 cumulative GPA (computed as specified in Student Rules Section 10.4.3). Degree-seeking students also must maintain a GPA of at least 3.000 on all courses listed on the degree plan. Departments and colleges may establish higher GPA requirements for their students in graduate degree programs and for post-baccalaureate non-degree students (G6 classification).

A graduate student will not receive graduate degree credit for undergraduate courses taken on a satisfactory/unsatisfactory (S/U) basis. A graduate student may not receive grades other than satisfactory (S) or unsatisfactory (U) in graduate courses bearing the numbers 681, 684, 690, 691, 692, 693, 695, 697 and 791 (except for ALEC 695, BUAD 693, AGECE 695, GEOG 695 and IBUS 692). These officially designated S/U courses may be listed on the degree plan, along with other courses approved and noted as S/U in the graduate catalog.

Graduate courses not on the degree plan may be taken on an S/U basis. Only grades of A, B, C and S are acceptable for graduate credit.

For graduate students, grades of D, F or Unsatisfactory (U) for courses on the degree plan must be absolved by repeating the courses at Texas A&M and achieving grades of C or above or Satisfactory (S). A course in which the final grade is C may be repeated for a higher grade. If the second grade is higher, the original grade will be excluded from the GPA calculation for the degree plan and cumulative GPA, but remain on the student's permanent record. The most recent grade will be used in computing the cumulative and degree plan GPAs.

A student repeating a course in which a grade of B or better has been earned will not receive grade points for the repeated course, unless the catalog states the course may be repeated for credit.

The cumulative GPA (please refer to Student Rule 10.4.3) for a graduate student is computed by using all graded graduate (600- and 700-level) and advanced undergraduate (300- and 400-level) coursework completed at Texas A&M and eligible to be applied toward a graduate degree. Those involving grades of W-drop (W), Satisfactory (S), Unsatisfactory (U) and Q-drop (Q) shall be excluded.

Any eligible coursework not applied toward a prior graduate degree, and not exceeding time limits, will be included in the student's GPA for the subsequent degree program.

If either of a student's cumulative GPA or the GPA for courses listed on the degree plan falls below the minimum of 3.000, he or she will be considered to be scholastically deficient. If the minimum GPA is not attained in a reasonable length of time, the student may be dismissed from graduate studies. A degree-seeking graduate student may also be considered scholastically deficient if they fail to show acceptable proficiency in such other requisites for their degree as may be assigned by the graduate committee, department or the **Office of Graduate and Professional Studies** (<http://ogaps.tamu.edu>) (e.g., qualifying and preliminary examinations, research, writing or a thesis or dissertation, etc.).

A post-baccalaureate non-degree student (G6 classification) who has completed 12 hours of course work is considered to be scholastically deficient when the student's grade point ratio falls below 3.00 or below a higher standard set by the department or college of affiliation; or the student fails to show proficiency in such other areas as may be specified by his or her department or the Office of Graduate Studies

For a scholastically deficient post-baccalaureate non-degree student (G6 classification), the student's home department shall determine eligibility, and the department is responsible for notifying the Office of Graduate and Professional Studies if a registration block is to be placed on the student.

The details of scholastic deficiency and procedures for dismissal are explained in Texas A&M University Student Rule 12 (refer to the website <https://student-rules.tamu.edu/rule12/>).

Departments or colleges may adopt specific guidelines pertaining to scholastic deficiency or dismissal.

New Graduate Student Orientation

<http://ogaps.tamu.edu/>

Coordinated by the Office of Graduate and Professional Studies, the New Graduate Student Orientation provides an overview of graduate education and services at Texas A&M University – including information on financial aid, procedures and processes, campus safety, writing services and additional campus services. New graduate and professional students will get the opportunity to meet campus leaders, administrators, and fellow graduate students. Experienced graduate students will be present to answer questions and provide insight about thriving in graduate school, balancing school, work and personal life, and making the most of living in the local communities. Designed to get new graduate and professional students off to a good start in their experiences, students will also have the opportunity to mingle and explore resource booths and meet representatives of campus services and organizations who serve the graduate and professional community.

For additional information about New Graduate Student Orientation, please contact the Office of Graduate and Professional Studies at ogaps@tamu.edu.

Certificate Requirements

Requirements for a Certificate

A student must receive permission from the department offering the certificate and their primary academic advisor in order to pursue a certificate. All requirements outlined in the catalog and degree evaluation for the specific certificate program must be met in order for a certificate to be awarded.

Certificate types:

- **Major-dependent** - A student is admitted to the program through the offering department. Admission to the program requires the student to pursue a specific degree/major at Texas A&M University. This type of certificate program typically serves as a track within a degree program. The certificate and degree are awarded simultaneously.
- **Degree-dependent** - A student is admitted to the program through the offering department. Admission to the program simply requires that the student pursue a degree at Texas A&M University. The certificate may or may not be related to their specific degree/major.

The certificate is awarded upon completion of the requirements independent of a degree.

- **Stand-alone** - A student is admitted to the program through the Office of Admissions. The student may pursue the certificate without being enrolled in a degree program. The certificate may be awarded upon completion of requirements.

Graduation Application, Certificate and Commencement

Beginning fall 2017, formal application for certificates to be awarded must be submitted online in Howdy (<http://howdy.tamu.edu>) by the deadline stated in the academic calendar.

Certificates are granted to students who make formal application for the certificate to be awarded, have all grades on record in the Office of the Registrar, and have satisfied all certificate requirements. Certificates are awarded no more frequently than the last calendar day of each month; with the exception of major-dependent certificates which are awarded at the end of each term, along with the student's associated degree.

Students must have settled all financial obligations to the university prior to receiving a certificate.

University certificates will either be mailed directly to the student or issued to the college for formal presentation.

Certificate/Graduation Fee

At this time, there is not a fee associated with the awarding of a certificate from Texas A&M University.

For additional information regarding certificate tracking and awarding, please visit the Office of the Registrar website (<http://registrar.tamu.edu/Graduation-Degree-Programs/Certificate-Tracking-Awarding>).

Degree Requirements

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Residence Requirement

A major purpose of the residence requirements for graduate degrees is to ensure that the student has an opportunity to benefit from the advantages of a university environment. These advantages include accessibility of library, laboratory and other physical facilities, and also the opportunity to participate in seminars and a variety of cultural

activities. Equally important to the graduate student are the advantages of becoming acquainted with the faculty and other students on a personal and a professional basis.

A student "in residence" is expected to devote most of his or her time and energy to graduate studies **under the direction of the student's advisory committee chair and the advisory committee**. Another major purpose of the residence requirements for graduate degrees is to ensure that the faculty have the opportunity to properly evaluate the student and his or her development, to guide and direct his or her studies, and to determine competency.

The minimum time required to qualify for an advanced degree varies with the ability and preparation of the student. A student may find it necessary to extend his/her studies beyond the minimum requirements. **For specific minimum residence requirements, a student should check the additional requirements for the degree which he/she is pursuing.**

Degree Plan

A graduate student must file a degree plan which includes those courses to be applied toward a particular degree and formally establishes the advisory committee. Courses previously used for another degree are not acceptable for degree plan credit.

Lower division undergraduate coursework (100- and 200-level) may not be used for credit toward a graduate degree. **Coursework applied to a previous degree may not be used toward a graduate degree. Coursework may not be used to satisfy requirements for more than one degree.**

Additional coursework may be added to the approved degree plan by the student's advisory committee if such additional coursework is needed to correct deficiencies in the student's academic preparation. Specific details and requirements for each degree program may be obtained from the student's academic department or the specific degree program requirements provided in the catalog. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Changes in the approved degree plan may be made by petition to the Office of Graduate and Professional Studies. A student should submit the degree plan and petitions using the online Document Processing Submission System located on the website at <https://ogsdps.tamu.edu>.

Courses listed on the degree plan are subject to degree program time limits. Please refer to the Time Limits section in each degree program section in which the student is presently enrolled.

For doctoral non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

The University has the right to rescind a previously granted degree if the University becomes aware of information indicating that the degree never should have been granted.

Petitions

Graduate students may use petitions to

1. request a change of major, degree or department;
2. request changes to the coursework or committee membership as established by the degree plan;
3. request a leave of absence;
4. request extensions to time limits; or
5. request exceptions to published rules.

Each petition will be considered on its own merit by the Associate Provost for Graduate and Professional Studies. The student should make such requests by submitting either a Major, Degree, or Department petition (MDD) or a Long Form petition using the online Document Processing Submission System located on the website at <https://ogsdps.tamu.edu>.

The petition will be routed for the required approval by the members of the student's advisory committee, if appointed, and the department head, or his or her designee (or chair of the intercollegiate faculty, if appropriate).

Limitations on the Use of Transfer, Extension and Certain Other Courses, Master's Degree

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.

5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Transfer of Credit for Doctoral Degrees

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Preliminary Examination For Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time

deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be

given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Research Proposal

Thesis-option master's degrees and all doctoral degrees require a research proposal. The proposal must be approved by the advisory committee and the head of the major department or chair of the intercollegiate faculty, if applicable. The proposal and proposal approval form must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination. All research proposals are routed to the Office of Research Compliance and Biosafety for review and approval by the Office of Graduate and Professional Studies prior to final approval.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690, 691, 692, 791, or other graduate courses specifically designated as S/U in the course catalog,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation research proposal,
5. met the residence requirements.

The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been

admitted to candidacy and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), 791 or other graduate courses specifically designated as S/U in the course catalog,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Final Examination for Masters Students

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A student shall be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). A department can have a stricter requirement provided there is consistency within all degree programs within a department.

A thesis option candidate may petition to be exempt from his/her final examination provided their degree plan GPR is 3.500 or greater and they have approval of the advisory committee, the head of the student's department and the Office of Graduate and Professional Studies. It is recommended that the petition for exemption be submitted the same semester the student intends to submit the thesis.

For non-thesis option students, a final comprehensive examination may be required. The final exam cannot be held prior to the mid-point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

A positive evaluation by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Thesis, Dissertation and Record of Study

The Office of Graduate and Professional Studies is responsible for reviewing each thesis, dissertation, and record of study to ensure that the format requirements of the University are met. Guidelines and electronic templates for the preparation of the manuscript are available in the *Thesis and Dissertation Manual* and online at <http://ogaps.tamu.edu>. All manuscripts must be submitted electronically.

Pre-Defense Publication of Thesis, Dissertation, or Record of Study Material

A graduate student may publish material that subsequently will be used as part of the thesis, dissertation, or record of study.

A student should be aware of the copyright agreement that is signed when a journal (hard copy or electronic) accepts an article for publication. At that time, the student generally assigns rights to the journal as publisher. If the student has not retained the right to use the material

in the thesis, dissertation, or record of study, the student must obtain written permission from the copyright holder to include the material in the manuscript. If such permission is not obtained, or rights have not been retained, the copyrighted material cannot be included in the thesis, dissertation, or record of study.

Use of Classified and Proprietary Information in Thesis, Dissertation, or Record of Study

Committee chairs are cautioned against allowing a student to use classified or proprietary information in electronic theses, dissertations, and records of study (ETDs), because these documents become available to the public upon submission to the Office of Graduate and Professional Studies. The research conducted at Texas A&M, as a Texas public institution, is ultimately for the benefit of the public. All ETDs are available on the Internet via the Texas A&M libraries. In addition, dissertations are published electronically by ProQuest (UMI) and are available from that source. A temporary embargo, or delay in public release, is possible.

Graduation

A graduate degree is conferred at the close of each regular semester and 10-week summer semester. A candidate for an advanced degree who expects to complete his/her work at the end of a given semester must apply for graduation by submitting the electronic application for degree to the Office of the Registrar and by paying the required graduation fee to Student Business Services no later than the Friday of the fifth week of the fall or spring semester or the Friday of the first week of the second summer term. **The electronic application can be accessed via the Howdy (<https://howdy.tamu.edu>) portal. A cancellation made after the application deadline will not result in a refund of the diploma fee. Graduate degree candidates who have completed all degree requirements will not be allowed to cancel their graduation application without approval from the Office of Graduate and Professional Studies.** A student should check the website of the Office of the Registrar at <http://graduation.tamu.edu> to determine the date and time of his/her graduation ceremony.

Qatar Students

Formal application for degrees at Texas A&M at Qatar is a two-step process. An application must be submitted online by the deadline stated in the academic calendar and degree application. In addition, the supplemental application must be submitted by the deadline. Under unusual circumstances, an application for a degree may be accepted after the stated deadline. The student must apply via the Howdy portal.

All students must have settled all financial obligations to the university and Qatar Foundation prior to receiving a diploma.

Graduate and undergraduate students completing their degree in July or December will have the opportunity to participate in the commencement ceremony in May, following the completion of their degree. Students must participate in the commencement ceremony of their home campus.

Letter of Completion

The Office of Graduate and Professional Studies may issue a letter of completion for an individual student upon written request from the student. The letter of completion certifies that the student has completed all academic requirements for the degree and states the date the degree will be awarded. International students should contact International Student Services prior to requesting a letter of completion to determine how receiving it could affect the student's visa status.

This letter may be requested anytime from the point the student has completed all requirements for the awarding of the degree and until five days prior to commencement. A student in a master's thesis option or a doctoral program must have completed all degree requirements, including final clearance from Thesis and Dissertation Services, to be eligible to request this letter. For a student in master's non-thesis option programs, requests for a letter will be accepted only if the student has completed all degree plan coursework and the final examination results, if applicable, have been approved by the Office of Graduate and Professional Studies.

Letter of Intent

Graduate students completing a graduate degree who wish to continue to enroll in pursuit of another graduate degree at Texas A&M should investigate the process of filing a letter of intent with the admitting department for the subsequent graduate degree. Letters of Intent are common when students are applying to pursue a subsequent degree within the same department and college, but may not be acceptable for students applying for a subsequent degree in a varying discipline from their current degree. A letter of intent which has been approved by the head of the department (or chair of the **intercollegiate** faculty) in which the student intends to study will be viewed by the Office of Graduate and Professional Studies as an admission to the program specified in the letter. A student must use the letter of intent form which is available on the website at <http://ogaps.tamu.edu>.

If a student wishes to enroll in a department where a letter of intent is not the accepted practice, the admitting department should consult with the Office of Graduate Admissions and The Office of Graduate and Professional Studies to pursue an alternate process for admission.

If a break in enrollment occurs for one academic year or longer following graduation, the student must apply for admission to the other graduate degree program through Graduate Admissions before enrolling in the other graduate degree program.

Professional Internship

In those programs in which a professional internship is used (see individual programs), a student will spend an appropriate period of time under the supervision of a practicing professional in industry, business, an educational institution or a government agency. The objectives of the internship are two-fold:

1. to enable the student to demonstrate the ability to apply technical training and knowledge by making an identifiable contribution in an area of practical concern to the industry or organization in which the internship is served, and
2. to enable the student to function in a non-academic environment in a position in which he or she will become aware of the organizational approach to problems in addition to those traditional approaches with which the student is familiar.

These may include, but are in no way limited to, problems of management, labor relations, public relations, environmental protection, economics, etc.

Internship agreements should be negotiated between the appropriate organization or industry and the appropriate academic department. The organization of the internship, the internship supervisor and the nature of the internship will be determined by mutual consent of the student, the head of the student's major department, the student's advisory committee and the supervising organization prior to the commencement

of the internship period. The internship experience should be at a level commensurate with the particular degree objective.

An internship report should be prepared by the student in accordance with guidelines established by the student's major department, the student's advisory committee or other appropriate body. The report should be submitted to the advisory committee and to any other organization which may be specified for specific programs. The internship report must be the original work of the student.

An internship, if utilized as part of a student's degree requirements, should be undertaken near the end of the student's educational program, after the student has had the opportunity to establish a solid theoretical base for the internship experience.

99-Hour Cap On Doctoral Degree

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences

- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Registration and Academic Status

General Information

Registration requirements for a graduate student holding an assistantship and/or fellowship are discussed in the section on Financial Assistance (p. 1490).

Full-Time Status

A graduate student (domestic or international) is considered full-time if he or she is registered for a minimum of:

- 9 semester credit hours during a fall or spring semester
- 6 semester credit hours during a summer semester

A Q grade or W grade does not count toward the certification of enrollment status.

Colleges and departments may impose additional semester credit hour requirements for a student holding an assistantship or fellowship which exceeds the minimum stated above.

Special considerations relate to "full time status" for an international student. Please refer to the information on this subject in the "Course Load Requirements for International (Non-Immigrant) Students with F1 or J1 Status" section.

A student who has financial assistance should consult Scholarships & Financial Aid (p. 1488), call (979) 845-3236 or visit <http://financialaid.tamu.edu>, for enrollment requirements.

Maximum Schedule

Fall/Spring: A graduate student may register for a maximum of 15 hours. The college dean's office can approve/register a student for up to 18 hours. A request to register for more than 18 hours should be submitted to the Office of Graduate and Professional Studies on the Petition for Waivers or Exceptions to University Requirements and must include the course/section number and the semester of registration. If approved, maximum allowable hours will be updated accordingly by the Office of Graduate and Professional Studies, and the academic department will register the student for the additional hours.

5-week summer session: A graduate student may register for a maximum of 6 hours. The college dean's office can approve/register a student for up to 9 hours. A request to register for more than 9 hours should be submitted to the Office of Graduate and Professional Studies on the Petition for Waivers or Exceptions to University Requirements and must include the course/section number and the semester of registration. If approved, maximum allowable hours will be updated accordingly by the Office of Graduate and Professional Studies, and the academic department will register the student for the additional hours.

10-week summer session: A graduate student may register for a maximum of 10 hours. The college dean's office can approve/register a student for up to 15 hours. A request to register for more than 15 hours should be submitted to the Office of Graduate and Professional Studies on the Petition for Waivers or Exceptions to University Requirements and must include the course/section number and the semester of

registration. If approved, maximum allowable hours will be updated accordingly by the Office of Graduate and Professional Studies, and the academic department will register the student for the additional hours.

Continuous Registration Requirements

A student in a graduate degree program requiring a thesis, dissertation, internship or record of study, who has completed all coursework on his/her degree plans other than 691 (Research), 684 (Internship) or 692 (Professional Study) is required to be in continuous registration until all requirements for the degree have been completed. If a student is registered only for zero credit 681, 684 or 685 course, this registration does not satisfy the continuous registration requirement for students in graduate degree program requiring thesis, dissertation, internship or record of study. Other courses, including 691 research hours, are not eligible for zero credit. The continuous registration requirement may be satisfied by registering either *In Absentia* or *In Residence*.

To qualify for *In Absentia* registration, a student must not have access to or use facilities or properties belonging to or under the jurisdiction of The Texas A&M University System at any time during the semester or summer term for which he or she is enrolled. A student who qualifies for *In Absentia* registration is required to register each subsequent fall and spring semester for a minimum of one and maximum of four credit hours of 691, 684, 685 or 692. Departments and colleges may have additional or higher requirements.

A student who is subject to *In Residence* registration (i.e., on campus) is required to register each subsequent fall and spring semester and each 10-week summer semester for at least one credit hour. University departments and colleges may have additional or higher requirements. Unless a student plans to take examinations, or use University resources including any interaction with their graduate committee, registration during the summer will not be required to fulfill the continuous registration requirement. However, colleges, departments or intercollegiate faculty may have additional or higher requirements.

An international student may have additional registration requirements depending on his/her visa status. He/she should consult with the International Student Services website or an International Student Services advisor to obtain current information on these requirements.

A student who does not comply with the continuous registration requirement will be blocked from registration. He/she will be allowed to register again after receiving a favorable recommendation from a departmental review committee (not the student's advisory committee), the endorsement of the department head, or Chair of the Intercollegiate Faculty and the approval of the Office of Graduate and Professional Studies. If a break in enrollment occurs for one academic year or longer, the student must apply for readmission to the graduate degree program through Graduate Admissions.

In Absentia

A student may register *In Absentia* if enrolled in a course which is offered on an individual basis and conducted away from the College Station campus and System campuses or facilities such as Agricultural Research and Extension Centers, Research Stations or other properties under the jurisdiction of The Texas A&M University System. Such courses may include, but are not limited to internships, directed studies, practicums, etc. To qualify for *In Absentia* registration, the student must not have access to or use of facilities of The Texas A&M University System at any time during the semester or summer term for which he or she is enrolled. The definition of "facilities" includes human resources and services

such as those provided by graduate advisory committee members responding to drafts of theses, dissertations or records of study material, etc. A student holding a fellowship or assistantship may not register *In Absentia*. An international student may require work authorization or other authorizations when registered *In Absentia* and should complete an "*In Absentia* Letter" to start this process. Sample letters are available online or at the International Student Services Office. A student going outside the U.S. and registering *In Absentia* should complete online emergency notification information so university assistance is available during crisis situations. More details about this are available on the Education Abroad Programs website <https://abroad.tamu.edu>.

Leave of Absence

Under unusual circumstances, a student may petition for a leave of absence. A petition for leave of absence is initiated by the student through the Document Processing Submission System (<https://ogsdpps.tamu.edu>) (DPSS). The entire advisory committee, if formed, and head of the department or Chair of the Intercollegiate Faculty, if appropriate, must approve the petition and route it to the Office of Graduate and Professional Studies. If the Associate Provost for Graduate and Professional Studies approves the petition, the registration requirement will be set aside during the period of leave. Leave will be granted only under conditions that require the suspension of all activities associated with pursuing the degree. For certain types of approved leave, such as medical, the time period for the completion of the degree will stop with the leave and begin when the student returns to the program. Other types of leave may not stop the time limit for the degree. A student should refer to the sections on Time Limits for master's and doctoral programs. A leave of absence is granted for one year. In a case of extenuating circumstances, the leave of absence can be extended by the student's committee and the Associate Provost for Graduate and Professional Studies. A student who returns to the University after an approved leave of absence will not be required to submit an application for readmission to the Office of Graduate Admission. An international student should visit with an International Student Services advisor to find out how a Leave of Absence may impact his/her stay in or his/her re-entry into the U.S.

Limitations for Texas A&M Faculty and Staff on Graduate Committee Faculty

The following limitations were set by the Graduate Council of Texas A&M University concerning advanced degrees for members of the faculty and staff of the university.

1. A member of the faculty above the rank of assistant professor normally will not be granted the doctoral degree at this institution. He/she may, however, enroll for graduate work.
2. A member of the graduate committee faculty may not serve on the graduate committee faculty of an academic program in which the member is pursuing a graduate degree or certificate.
3. Any exceptions, individual or program, to the above regulations must have the written approval of the appropriate department head, college dean, the Associate Provost for Graduate and Professional Studies, and the Provost and Executive Vice President before the person applies for admission to graduate studies.

Undergraduates Registering for Graduate Courses

A senior undergraduate student with a grade point average of at least 3.000 is eligible to enroll in a graduate course and reserve it for graduate credit by filing a "Petition for Undergraduate Student to Enroll in Graduate Courses or Reserve Undergraduate Courses for Graduate Credit" obtained from the Registrar's website at http://registrar.tamu.edu/Registrar/media/REGI_Forms/UGpetition.pdf. The petition must be approved by the course instructor, the student's major department head, the dean of the college offering the course and the dean of the student's undergraduate college.

An academically superior undergraduate student with a grade point average of at least 3.250 is eligible to apply graduate credit hours toward his/her undergraduate degree program by filing a "Petition for Undergraduate Student to Enroll in Graduate Courses or Reserve Undergraduate Courses for Graduate Credit" obtained from the Registrar's website at http://registrar.tamu.edu/Registrar/media/REGI_Forms/UGpetition.pdf. The petition must be approved by the course instructor, the student's major department head, the dean of the college offering the course and the dean of the student's undergraduate college. Graduate credit hours used to meet the requirements for a baccalaureate degree may not be used to meet the requirements for a graduate degree.

A senior undergraduate student with a grade point average of at least 3.000 is eligible to reserve an undergraduate course for graduate credit by filing a "Petition for Undergraduate Student to Enroll in Graduate Courses or Reserve Undergraduate Courses for Graduate Credit" obtained from the Registrar's website at http://registrar.tamu.edu/Registrar/media/REGI_Forms/UGpetition.pdf. The petition must be approved by the student's major department head and the dean of the student's undergraduate college. Undergraduate credit hours used to meet the requirements for a baccalaureate degree may not be used to meet the requirements for a graduate degree.

VA Benefits

In order to receive full Veterans Administration (VA) benefits, students must be enrolled in the minimum amount of courses counting toward their program of study to be considered full-time by the Department of Veterans Affairs. This number may differ between degrees and during the summer term. For hour requirements for your degree, please contact veterans@tamu.edu.

Course Load Requirements for International Students with F-1 or J-1 Status

A student with F-1 or J-1 visa status is required to be enrolled full-time in fall and spring semesters. Summer semester is traditionally a vacation period unless it is the student's first or graduating semester and the student is then required to enroll full-time. In order for the student to be enrolled less than full-time, the student must receive written authorization from International Student Services. If the student does not receive the written authorization prior to being enrolled less than full-time, then the student may be out of legal status with the Department of Homeland Security or the Department of State. Loss of legal immigration status is very serious and will result in a student being ineligible to be employed and may result in a student having to leave the United States. The

student is responsible to uphold U.S. federal government and University regulations.

The U.S. government allows a student to register less than full time in certain circumstances. These reasons may be found in the "Reduced Course Load" section available on the International Student Services website. Also, in certain situations, the Registrar may be able to authorize that a student has full-time enrollment status, even though the student is enrolled for fewer than the normally required number of hours.

For immigration purposes a student with F-1 status may request authorization from ISS to co-enroll at another institution for full-time enrollment. Please visit the ISS web page for more information.

Federal regulations only allow F-1 students to count three hours of distance learning credits toward their full-time enrollment status. J-1 students may not count co-enrollment or distance learning credits to be considered full-time enrolled for immigration purposes.

Classification

Each student has a classification which indicates the type of degree program in which the student is enrolled, and reflects the student's progress within that program at the professional level. The classifications follow:

| Code | Classification Definition |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G6 | Postbaccalaureate Non-degree |
| | Postbaccalaureate non-degree classification is intended for a student with a baccalaureate degree from an institution of higher education. If at a later date, a postbaccalaureate non-degree student decides to pursue a graduate degree, the student must understand that limitations may be placed on coursework taken while in G6 status. Specifically, the student must understand that a college or a department may decide whether or not to accept any G6 work toward the student's graduate degree; however, with the approval of the student's graduate advisory committee, the department head, or Chair of the Interdisciplinary Program and the Office of Graduate and Professional Studies, a maximum of 12 credit hours taken in postbaccalaureate non-degree status may be used on a student's degree plan. Admission to postbaccalaureate non-degree status does not establish eligibility for admission to degree-seeking status. A postbaccalaureate non-degree student is not eligible to register for 691 Research hours. |

An application for a postbaccalaureate non-degree classification is handled on a first come, first served basis. An application submitted within one month of registration may not be processed in time to begin that semester or term.

Enrollment of a G6 student in courses may be limited by college and departmental policies. Each postbaccalaureate non-degree student must be reviewed by his or her department of affiliation for continuation at the end of each semester.

A postbaccalaureate non-degree student must maintain at least a 3.000 GPA on all coursework attempted to remain eligible to register. University departments and colleges may have additional and higher requirements.

For the scholastically deficient postbaccalaureate non-degree student (G6 classification), the student's home department shall determine eligibility, and it is the department's responsibility to place a registration block on these students. Postbaccalaureate non-degree status normally is not available to an international student.

G7 Graduate, Master's
G7 classification denotes admission to a masters level program of study or admission to a doctoral program of a student who has not yet completed a master's degree or 30 hours of eligible coursework taken at Texas A&M.

G8 Graduate, Doctoral
G8 classification denotes admission to a doctoral level program of study.

G9 Graduate, Master's/Doctoral Admitted
G9 classification denotes admission to graduate study but signifies documents must be completed before a student is allowed to file a degree plan. When the required documents have been received, the student's classification will be changed. Approval of the Associate Provost for Graduate and Professional Studies is required to change a student from G9 classification to the appropriate classification (i.e., G7 or G8).

| | |
|-----------|------------------------------------------------|
| D1 | Dentistry, First Year |
| D2 | Dentistry, Second Year |
| D3 | Dentistry, Third Year |
| D4 | Dentistry, Fourth Year |
| D6 | Dentistry, Postprofessional Certificate |
| L0 | Law, Non-degree |
| L1 | Law, First Year |
| L2 | Law, Second Year |
| L3 | Law, Third Year |
| M1 | Medical, First Year |
| M2 | Medical, Second Year |
| M3 | Medical, Third Year |
| M4 | Medical, Fourth Year |
| P1 | Pharmacy, First Year |
| P2 | Pharmacy, Second Year |
| P3 | Pharmacy, Third Year |
| P4 | Pharmacy, Fourth Year |
| V1 | Veterinary, First Year |
| V2 | Veterinary, Second Year |
| V3 | Veterinary, Third Year |
| V4 | Veterinary, Fourth Year |

Semester Credit Hour

A lecture course which meets one hour per week for 15 weeks is worth 1 semester credit hour. Thus, a course worth 3 semester credit hours, meets three hours per week. Credit hours for laboratory courses are determined to be some fraction of the number of hours spent in class.

For further information, visit Texas A&M University Rule – Definition of a Credit Hour – 11.03.99.M1 (<http://rules.tamu.edu/PDFs/11.03.99.M1.pdf>), which complies with The Texas Higher Education Coordinating Board definition of minimum course lengths as part of the Texas Administrative Code, "Minimum Length of Courses and Limitation on the Amount of Credit that a Student May Earn in a Given Time Period". For more information, please see the Texas Administrative Code online ([http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=T&app=9&p_dir=N&p_rloc=162966&p_tloc=&p_ploc=1&pg=2&p_tac=&ti=19&pt=18](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=T&app=9&p_dir=N&p_rloc=162966&p_tloc=&p_ploc=1&pg=2&p_tac=&ti=19&pt=18)).

ADMISSION

General Information

A formal application is required from a person seeking admission or readmission to graduate studies. Applicants should refer to the program website for information regarding how to submit an application. Some programs use a national application service and some use the state's ApplyTexas application. Applicants may be considered for only one degree-seeking program at a time for a particular semester.

An application fee of \$65 for U.S. citizens and permanent residents or \$90 for international applicants is required to process an application for admission. The application fee is nonrefundable. Most national application services also charge a processing fee. The \$65 fee required of U.S. citizens or permanent residents may be waived, but only in exceptional cases, for low-income applicants. In such cases, an applicant should include with the application for admission a letter from his/her financial aid officer or other knowledgeable officer verifying the need for a waiver. Waiver of the \$90 international application fee is not available.

With the approval of the degree granting unit providing admission, admission to graduate studies normally remains valid for one year from the term of acceptance. **Admission deferral requests must be made before the start of the term of the original application.** An extension to the one-year time limit may be granted, if requested by the applicant in writing and approved by the degree granting unit.

Departments may have admission requirements in addition to those of the University. In such cases, higher departmental requirements supersede those of the University. While an application for admission may be considered with unofficial test scores and uploaded transcripts (by departmental discretion), **official test scores and transcripts must be provided prior to enrollment.** The official test scores and transcripts will be compared to any unofficial documents provided for admission. If discrepancies are identified, the admission may be rescinded. Admission may also be rescinded if we discover or receive notification of fraudulent admission credential(s).

Some national application services require a credential evaluation to accompany foreign transcripts. Texas A&M University reserves the right to determine degree equivalencies and our evaluation may differ from the credential evaluation.

The normal requirement for admission to graduate studies is a scholastic record which, over at least the last two years of full-time academic study in a degree program, gives evidence of the applicant's ability to do successful graduate level work. An applicant whose academic record is not satisfactory, or who is changing fields of study, may be required to take additional work in preparation for graduate study. Such work will normally be arranged in conference with the graduate advisor or the head of the student's major department. Before accepting a student for graduate study, a department may require that the student pass a comprehensive examination covering the basic undergraduate work in that field.

To allow time for processing, application documents should be filed at least six weeks prior to the opening of the semester. Admission to graduate studies cannot be completed until all the credentials requested in the application form have been received and evaluated.

In addition to the records sent to the Office of Admissions, an applicant should have in his/her possession a copy of his/her record for use in

conferences with the graduate advisor or graduate faculty in his/her department. An applicant, otherwise qualified for admission to graduate studies, may not be approved in instances where the facilities and staff available in the particular field are not adequate to take care of the needs of the student.

International Admission Status

An applicant from another country seeking admission to graduate studies must meet the same requirements for admission as applicants from the United States. In addition, he or she must demonstrate the ability to read, write, speak and understand the English language. A prospective student whose native language is not English may take either the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or the PTE Academic exam. All exams are offered at locations around the world. Applications for these exams together with additional information about these examinations may be found on their websites; TOEFL information may be obtained at <http://www.ets.org/toefl>, IELTS information from <http://www.ielts.org/> and PTE Academic from <http://pearsonpte.com/>. Applicants from non-English speaking countries must present a TOEFL score of at least 80 Internet-based, an IELTS score of at least 6.0 overall band or a PTE Academic score of 53 to be admitted to graduate studies and receive the documents necessary to apply for a visa. An applicant *may* be exempt from the English Language Proficiency requirements by completing all credits of a baccalaureate degree or higher in the United States or scoring a 146 or higher on the Verbal section of the GRE. Some departments reserve the right to require a TOEFL/IELTS/PTE Academic score even though it may be waived by one of the above criteria.

Additionally, applicants who are citizens of the following countries will be exempt from the English Language Proficiency requirement for admission and considered English Language Proficiency (ELP) Verified:

- American Samoa
- Anguilla
- Antigua and Barbuda
- Australia
- Bahamas
- Barbados
- Belize
- Bermuda
- British Virgin Islands
- Canada (except Quebec)
- Cayman Islands
- Dominica
- Federated States of Micronesia
- Gambia
- Ghana
- Gibraltar
- Grenada
- Guyana
- Ireland
- Jamaica
- Liberia
- New Zealand
- Nigeria
- Saint Kitts and Nevis

- Saint Lucia
- Trinidad/Tobago
- Turks and Caicos Islands
- United Kingdom

NOTE: Applicants from these countries will be considered ELP Verified, but must still follow the ELP Certification process to serve as Teaching Assistants.

Official TOEFL scores are reported directly by the Educational Testing Service to Texas A&M University using institution code 6003 or to national application services using the appropriate institution code. The departmental code is not necessary.

IELTS scores should be sent electronically from the test center to:

Admissions Processing
Texas A&M University
P.O. Box 40002
College Station, TX 77842-4002

PTE Academic scores must be assigned to Texas A&M University electronically via the PTE score reporting website. To send your scores, log in to the Pearson portal and follow the steps online.

Post-baccalaureate Non-degree Status (G6)

Application for post-baccalaureate non-degree classification requires a completed application form, a statement about the applicant's need for the proposed coursework at Texas A&M University and his or her ability to successfully complete that coursework, the required application processing fee and a complete, official transcript showing completion of a baccalaureate degree. An applicant for post-baccalaureate non-degree classification must indicate a department of affiliation when he/she applies. Admission to post-baccalaureate non-degree classification requires departmental approval along with approval of the Office of Admissions. Admission to post-baccalaureate non-degree status (G6) normally remains valid for one year from the date of acceptance.

Enrollment of a post-baccalaureate non-degree student may be limited by college or departmental policies.

Post-baccalaureate non-degree classification is intended for a student with a baccalaureate degree from an institution of higher education wishing to take graduate level coursework without pursuing a degree.

If at a later date, a post-baccalaureate non-degree student decides to pursue a graduate degree, the student must understand that limitations may be placed on coursework taken while in G6 status. Specifically, a college or a department may decide whether or not to accept any G6 work toward the student's graduate degree. A maximum of 12 credit hours taken in post-baccalaureate non-degree status may be used in a student's degree plan with the approval of the student's graduate advisory committee, the department head and the Office of Graduate and Professional Studies. Admission to post-baccalaureate non-degree status does not establish eligibility for admission to degree-seeking status.

A post-baccalaureate non-degree classification application is handled on a first come, first served basis. An application submitted within one month of registration may not be processed in time to begin that semester or term.

Enrollment of a G6 student in courses may be limited by college and departmental policies. Each post-baccalaureate non-degree student must be reviewed by his or her department of affiliation for continuation at the end of each semester.

A post-baccalaureate non-degree student must maintain at least a 3.000 GPR on all coursework attempted to remain eligible to register. University departments and colleges may have additional and higher requirements.

For a scholastically deficient post-baccalaureate non-degree student, the student's home department shall determine eligibility for continued enrollment, and the department is responsible for placing a registration block on the student.

A post-baccalaureate non-degree status typically is not available to an international student.

Prospective Student Centers

Texas A&M University has several conveniently located Prospective Student Centers throughout the state, staffed with regional advisors ready to serve you. Please contact the center nearest you to learn more about admissions, financial aid, academic programs and student services. Texas A&M also has regional advisors who serve the Brazos Valley, Central Texas and El Paso areas as well as regional advisors throughout the U.S. to assist out-of-state applicants. Visit the website admissions.tamu.edu/psc for more details.

Aggieland Prospective Student Center¹

Texas A&M University
109 John J. Koldus Building
1265 TAMU
College Station, TX 77843-1265
(979) 458-0950

Corpus Christi Regional Prospective Student Center¹

5350 South Staples, Suite 442
Corpus Christi, TX 78411
(361) 289-7905

Dallas/Fort Worth Regional Prospective Student Center¹

3900 Arlington Highlands Blvd., Suite 273
Arlington, TX 76018
(817) 375-0960

Houston Regional Prospective Student Center¹

1225 North Loop West, Suite 200
Houston, TX 77008
(713) 454-1990

Laredo Regional Prospective Student Center¹

6401 Arena Road, Suite 5A
Laredo, TX 78041
(956) 795-0412

Rio Grande Valley Regional Prospective Student Center¹

5277 North 23rd St.
McAllen, TX 78504
(956) 683-8647

San Antonio Regional Prospective Student Centers¹

40 NE Loop 410, Suite 605
San Antonio, TX 78216
(210) 212-7016

Office of Admissions¹

217 John J. Koldus Building
 Texas A&M University
 1265 TAMU
 College Station, TX 77843-1265
 (979) 845-1060
admissions@tamu.edu
<http://admissions.tamu.edu>

¹ Se habla español.

Readmission to Graduate and Professional Studies

A readmit is a student who has previously enrolled in Graduate and Professional Studies at Texas A&M University.

1. A returning graduate student (G6, G7, G8) who has attended Texas A&M University within the past 12 months will not have to submit an application for readmission.
2. A returning graduate student (G6, G7, G8) who has not attended Texas A&M for a period of over one year must provide an application for readmission and will be sent to the respective department for approval to admit.
3. The department, college, or Office of Graduate and Professional Studies is responsible for placing academic or administrative blocks. The Office of Admissions will check for blocks before a student is readmitted.

Regular Admission Status

Admission to graduate programs at Texas A&M University is determined by individual degree programs. The overall admission criteria for the University are based on the entire record of the applicant and availability of departmental resources. The items considered include, but are not limited to the following:

- holding an accredited baccalaureate degree (of at least three years) from a college, institution or university of recognized standing, or its equivalent, qualifies an applicant for consideration for admission,
- an official score on a standardized test is required unless otherwise specified by the graduate program to which an applicant is applying. A program can request exceptions to the Office of Graduate and Professional Studies. The scores can only be evaluated in a manner which complies with Chapter 51, Subchapter W of the Texas Education Code, Admissions and Scholarship policies for Graduate and Professional Programs,
- transcripts, official transcript (with degree confirmation),
- letters of recommendation,
- professional and/or academic experience and performance,
- promise of ability to pursue advanced study and research satisfactorily,
- adequate preparation to enter graduate school in the specific discipline or field of study,

- Statement of Purpose essay.

In addition to the above University admission requirements, some colleges, departments, and programs require indicators of success, such as a portfolio or personal interview. Each applicant should check the specific program admission requirements and deadlines for completing an application file.

During 2019–2020, the GRE and GMAT will be given at various centers throughout the United States and in other countries, including Texas A&M University. The GRE is also offered by computer at Texas A&M University which allows more rapid score reporting. To determine the most convenient locations to take either the GRE or GMAT, prospective applicants should contact the Educational Testing Service, Princeton, NJ, or the Graduate Admission Council. **All applicants to Mays Business School (MBA, EMBA, MS, MRE, PhD) should refer to the website <http://mays.tamu.edu> and use the Mays online application system. Applicants to programs in the Health Science Center should refer to the website <https://www.tamhsc.edu/academics/admissions.html> and use the designated application systems.**

Applicants who do not possess a degree considered to be equivalent to a U.S. bachelor's degree or higher will be denied admission.

¹ Se habla español

College/School Specific Information

- College of Dentistry (p. 33)
- School of Law (p. 36)
- College of Medicine (p. 38)
- College of Nursing (p. 40)
- Irma Lerma Rangel College of Pharmacy (p. 40)
- School of Public Health (p. 41)
- College of Veterinary Medicine and Biomedical Sciences (p. 41)
- Texas A&M University Qatar Campus (p. 42)

College of Dentistry

College of Dentistry (Certificate, MS, or PhD)

Application Fee

- Some of the clinical certificate programs use Postdoctoral Dental Matching Program (Match), and/or Postdoctoral Application Support Service (PASS). Applications made for the basic science MS or PhD in Oral Biology must be made through ApplyTexas. Any application fees charged by these services must be paid at the time of application.
- If a clinical certificate program uses a College of Dentistry application, a \$35 non-refundable fee is due for first-time applicants. The fee to reapply is \$25.

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|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Previous Degree | <ul style="list-style-type: none"> • Requirements vary for specific graduate programs. • Official transcripts of all undergraduate and graduate work from all previously attended institutions. |
| Nationally Scored Test (GRE/ADAT) | <ul style="list-style-type: none"> • All applicants (Certificate, MS, PhD, or combined MS/Certificate) must provide a nationally scored test. Program-specific information may be obtained by contacting your program of choice. |
| English Language Requirements | <p>English proficiency verification can be achieved by presenting:</p> <ul style="list-style-type: none"> • TOEFL score of at least 80 on TOEFL iBT (550 paper-based), or • an IELTS score of at least 6.0, or • a GRE Verbal Reasoning score of at least 146 (400 on the old scale), or • GMAT Verbal score of at least 22, or • a PTE Academic score of at least 53, or • acquiring alternative verification from the Office of Graduate and Professional Studies via a departmental request (an international student holding an advanced degree from an accredited US institution qualifies for alternative verification). |
| Foreign Degree Transcripts | <ul style="list-style-type: none"> • All foreign transcripts must be evaluated by Educational Credential Evaluators (ECE). |
| Other Requirements | <ul style="list-style-type: none"> • Approval for admission from the Program Admissions Committee and the Associate Dean for Research and Graduate Studies. |

College of Dentistry (DDS)

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| Application Fee | <ul style="list-style-type: none"> • Texas Medical and Dental Schools Application Service (TMDSAS) • \$165 flat fee (for one or all three Texas dental schools) • For non-Texas residents: ADEA American Association of Dental Schools Application Service (AADSAS) • \$245 for the first dental school and \$99 for each additional dental school • College of Dentistry Secondary Application for non-Texas residents only • \$50 non-refundable fee |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Previous Degree | <ul style="list-style-type: none"> • Not required but current competitive level dictates BA or BS from accredited college or university prior to matriculation • Official transcript of all undergraduate and graduate work from previously attended institutions |
| Undergraduate Cumulative GPA | Completion of required courses with GPA as high as possible (90 SCHs minimum; BA or BS degree recommended); admission is competitive |
| Dental Admission Test (DAT) | Official scores required |
| International Requirements | <ul style="list-style-type: none"> • At least 90 SCHs from a fully accredited college or university in the U.S. or its territories including specific subject requirements • Degree preferred |
| Other Requirements | Letter of recommendation (LOR) from practicing dentist, health professional advisor or committee; also interview; comprehensive biographical sketch; observation of a general dentist; and community service experiences |

Taking the Dental Admission Test (DAT)

The applicant should take the DAT in the spring or summer prior to applying. The DAT is offered at Prometric Testing Centers with locations throughout the country. The DAT is administered on computer almost every day of the week. An applicant with below average scores on the test may wish to retake the test in order to become more competitive. A 90-day waiting period is required before re-testing.

Other resources include the Dental Admissions Testing Program (<http://www.ada.org/en/education-careers/dental-admission-test>).

Application Procedures

The college participates in the Texas Medical and Dental Schools Application Service (TMDSAS). This central processing service allows the applicant to apply to any or all of the three dental schools in the State of Texas. The TMDSAS accepts and processes all materials of the primary application for admission to the Doctor of Dental Surgery program only. Texas Residents MUST apply through the TMDSAS.

The college participates in the American Association of Dental Schools Application Service (AADSAS) for out-of-state students. Out-of-state applicants who apply through AADSAS must also apply using the College of Dentistry application available online at TAMHSC Admissions Processing Portal (APP) (<https://bamf.tamhsc.edu/2>).

To apply to the program leading to the Doctor of Dental Surgery degree, the applicant should:

- Access full information and the online application at the website for:
The Texas Medical and Dental Schools Application Service
702 Colorado, Suite 6.400
Austin, Texas 78701
<http://www.tmdsas.com>

- Applicants needing assistance or who have no Internet access may contact the TMDSAS:
Telephone: (512) 499-4785
Fax: (512) 499-4786
- Timetable for filing application:
Earliest date: May 1, year prior to desired admission
Latest date: Application deadline is September 29 in year prior to desired admission

Application Fees: The TMDSAS has a variable fee based upon the number of schools for which you apply. The College of Dentistry requires a secondary application but charges no additional processing fee.

It is to the applicant's advantage to apply as early as possible. The TMDSAS online application is accessible beginning May 1 of the application cycle. The Office of Recruitment and Admissions strongly advises that you submit your application by late August. Selection for interviews begins in July, and this requires a transmitted complete application. TMDSAS will not transmit incomplete applications to the participating dental schools. A definition of the completed application is available on the TMDSAS website. The TMDSAS may take 4 to 6 weeks to process the application before sending it to the dental college.

The College of Dentistry requires the submission of a secondary application in addition to the primary application. This application can be accessed from links on the TMDSAS website or at the application site APP (<https://bamf.tamhsc.edu/2>).

The application for admission is not complete until the secondary application is submitted.

Required Interview

An interview is required. The applicant may be asked to come for an interview with the Admissions Committee. Interviews are scheduled by the Office of Recruitment and Admissions. Although an official interview is not granted to all applicants, the college gladly provides complete information and counseling for all prospective students. Visits to the campus for conferences and observations of the facilities can be arranged during spring and summer months.

Basis for Accepting Students

The quality of academic achievement is the first point of consideration. The grade point average (GPA) and the Dental Admission Test (DAT) are the primary factors used in this evaluation. The interview with the Admissions Committee gives the opportunity for evaluation of noncognitive factors. Preference is given to residents of Texas and the surrounding states that do not have a college of dentistry. Consideration of any factors that may have impacted academic or personal history is important in interview selection and final acceptance decisions. Consideration is also given to how the student may contribute to the diversity of the class. Additionally, applicants seeking to enter the dental school must be able to perform the essential functions required to complete the curriculum successfully.

Improving Chances for Admission

The application for admission to the College of Dentistry may be strengthened by the following:

- keep the GPA as high as possible
- make above average scores in all areas of the DAT

- upper-division biological science courses similar to those taken by the first-year dental students
- give careful attention to details in filing the application - apply early
- assure your personal statement explains your motivation for pursuing dentistry, including personal and academic achievements, hardships overcome and other factors that affected personal or academic progress
- observation in a general practice dental office is required
- participate in activities to improve manual dexterity and imaginative, creative ability
- take advantage of opportunities for community service
- evaluate and be able to articulate your skills, abilities, attitudes, etc., to determine if you are motivated to make the commitment required for a career in dentistry

Comprehensive Review of Application

A comprehensive (whole-file review) of the application is performed to reveal characteristics critical to the practice of dentistry, factors that indicate success in the dental curriculum that are not evident from academic history or standardized test performance and potential for future contributions to the dental profession. They include:

- motivation to pursue a career in dentistry
- involvement in community service
- observation or involvement in a dental office or clinic
- involvement in a summer pre-dental preparatory program
- letters of evaluation
- communication capabilities including writing (as evidenced in personal statement) and conversational English proficiency
- the applicant's ability to contribute to the diversity of the class including their race or ethnicity, socioeconomic background, talents, life skills and experiences and special attributes
- region in Texas in which applicant resides
- residence in a Texas county designated as underserved by dental health professionals
- employment while attending college
- preparation to attend and succeed in post-secondary education
- parents' educational background
- applicant is first college attendee in his/her immediate family
- history of extreme hardship
- leadership positions held in societies or organizations
- evidence of diverse cultural experience
- multilingual capabilities

Becoming More Competitive as a Re-applicant

- All re-applicants must be enrolled in coursework to be considered as a competitive candidate. We recommend taking post-baccalaureate coursework in the biological sciences to further prepare for the dental school curriculum, keep current with study skills and prove to the Admissions Committee the applicant's motivation and preparedness (for example: anatomy, physiology, biochemistry II, microbiology, histology, neuroscience, cell and molecular biology, immunology).
- Re-applicants need to critically review their applications for areas that may need further work: biological science coursework, DAT scores, GPA, community service and volunteer work, and general dental office shadowing experience.

- Re-applicants should continue to participate in shadowing and on-going volunteer activities during the application cycle.
- Re-applicants who follow this advice to improve their academic background and general application will be more competitive than those with little change from year to year.
- Working in a dental office alone will not improve the applicant's competitiveness.

More Information

For up to date information, please go to the College of Dentistry website (<https://dentistry.tamhsc.edu>). Select the section on Questions and Answers About Admissions to quickly access updated information and resources to further your knowledge of the admissions process. Go directly to Procedure for Application if you need specific directions on how to apply. To aid in planning and as a gauge for how you may compare to the “average” entering student, access the statistics in the snapshots of the recent entering classes.

Texas residents MUST apply through the Texas Medical and Dental Schools Application Service (TMDSAS). To access the full information and the online application, please visit TMDSAS (<http://www.tmdsas.com>).

Out-of-state applicants have three options. They may apply through the TMDSAS, through the American Association of Dental Schools Application Service (AADSAS), or with the application packet (<https://dentistry.tamhsc.edu/admissions/applications.html>).

Please note: Out-of-state applicants who apply through the American Association of Dental Schools Application Service (AADSAS) MUST also submit the College of Dentistry application.

If you have further questions, you may contact the Office of Recruitment and Admissions by email at admissions-dentistry@tamhsc.edu or by telephone at (214) 828-8231.

Texas A&M University College of Dentistry
Office of Recruitment and Admissions
3292 Gaston Ave., Room 525
Dallas, Texas 75246-2013

Doctor of Dental Surgery (DDS)

Duration

- 4 years (includes 3 summer sessions)
- D1 – Biomedical Sciences and Pre-clinical Dentistry
- D2 – Pre-clinical Dentistry
- D3 and D4 – Clinical Dentistry

(For specific information about the DDS curriculum, please contact the Office of Academic Affairs.)

Requirements

- Dental Admissions Test (DAT), 90 semester hours (minimum; BS degree recommended), specific course requirements (see below)

Application Deadline: September 29

Start Term: Fall

The Integrated Doctor of Dental Surgery (DDS) and Doctor of Philosophy (PhD)

Admission Requirements

Admission into this combined program requires that the applicant be accepted into the DDS program first, and then make a separate application to the PhD in Oral Biology program. The applicant completes the forms, including additional information on the areas of research interest, academic background, GRE scores, and prerequisite courses, academic honors, research experiences, and the names of three referees. Recommendation forms are specifically designed with questions on the applicant's scholarly aptitude, including intellectual, problem-solving, and creative skills. The style of questions resembles that used on National Institute of Health/National Institute of Dental and Craniofacial Research (NIH/NIDCR) Career Development applications. Applicants use Apply Texas, which is an all-inclusive site for graduate programs in the State of Texas. Selected applicants will be interviewed by the Oral Biology Graduate Program Director. Applicants must be accepted into both degree programs (DDS and PhD). For more information, go to Graduate Program in Oral Biology (<http://dentistry.tamhsc.edu/bms/gradprogram>) and see the section The Degree of Doctor of Philosophy in this catalog.

School of Law

School of Law (JD)

| | |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application Fee | \$65 non-refundable fee for U.S. citizens and Permanent Residents applicants. \$90 non-refundable fee for international applicants. |
| Previous Degree | Must have an earned bachelor's degree from an institution accredited by an agency recognized by the Department of Education. Foreign-educated applicants must possess a degree equivalent to a U.S. baccalaureate. Matriculating students must provide an official transcript verifying the conferral of the baccalaureate degree. Failure to do so will result in the administrative withdrawal of the student. |
| Undergraduate Cumulative GPA | No Minimum |
| Law School Admission Test (LSAT) or Graduate Record Examination (GRE) | Official LSAT or GRE scores required (no more than five years old) |
| International Requirements ¹ | Transcript evaluations must be performed by the Credential Assembly Service (CAS) provided by the Law School Admission Council (LSAC) |

Other Requirements

- Foreign-educated applicants must demonstrate their English language proficiency through either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). The recommended minimum score for the TOEFL is 100 on the internet-based test, and the recommended minimum score for the IELTS is 7.0.
- A personal statement and resume
- Supporting addenda (including Character and Fitness Disclosure requirements)
- A complete CAS report:
 - # All post-secondary transcripts; evaluations as required
 - # A minimum of 2 letters of recommendation (LOR), no more than 3 letters.

The law school enrolls first-year students in the fall of each academic year. Applicants to the law school are not required to complete any specific pre-law curriculum or coursework. Applicants are encouraged to choose a course of study that emphasizes writing, analytical thinking, problem solving and critical reading.

The law school requires that an applicant for admission must earn a bachelor's degree from an institution accredited by an agency recognized by the Department of Education prior to enrollment in the JD program. Foreign-educated applicants must possess a degree equivalent to a U.S. baccalaureate. An applicant's prior academic record and performance on the LSAT or GRE are important criteria in evaluating his or her aptitude for legal study as well as potential for success on the bar examination and in other professional endeavors. Applicants are encouraged to visit our website at <http://law.tamu.edu/prospective/admissions> for the most updated information concerning law school admission.

Formal Application

Please submit the following as part of your entering JD application:

- Completed and signed electronic application form (available at LSAC.org (<http://www.lsac.org>))
- \$65 non-refundable application fee for U.S. citizens and Permanent Resident applicants. \$90 non-refundable fee for international applicants.
- Personal statement not to exceed two double-spaced pages
- Résumé

Once your electronic application form has been submitted online, the Office of Admissions will automatically request an official copy of your CAS/LSAT report from LSAC. The following items must be a part of your report before it will be released to Texas A&M Law:

- A reportable LSAT or GRE score
- All post-secondary transcripts
- At least two letters of recommendation (LORs). No more than 3 LORs can be included in a CAS report for Texas A&M Law.

Admissions Decisions

Texas A&M University School of Law accepts applications on a rolling basis. For applicants whose application files are complete by our priority deadline, February 1st, the Admissions Committee will make every effort to provide decision and tuition waiver information before the first traditional law school seat deposit deadline, April 1st.

We have a final deadline of July 1st. However, Texas A&M University School of Law can make no guarantees that seats and financial assistance will still be available at the latter point of the cycle. To maximize your chances of admission and consideration for tuition waivers, we encourage you to apply by our priority deadline. The Admissions Committee will give careful consideration to applications until the entering class is full.

In addition to considering traditional academic achievements and aptitude, the admissions committee will take into consideration evidence of achievement in various undertakings such as graduate study, employment, extracurricular activities and community service.

Texas A&M School of Law values diversity of persons and diversity of views and will consider factors such as ethnic heritage, socioeconomic background, status as a first generation college graduate, geographic residency, multilingualism, exposure to diverse cultural experiences, and any other consideration deemed necessary to accomplish its stated mission in the evaluation process.

Because of the high ethical standards to which lawyers are held, Texas A&M School of Law reserves the right to deny admission to any applicant who, in the judgment of the admissions committee, appears to be unfit in character to engage in the study or practice of law.

Tuition Deposits

Upon notice of acceptance, applicants are required to pay a nonrefundable deposit to reserve a seat in the upcoming class. Deposits are credited toward tuition charges. In compliance with the statement of good admissions practices by the Law School Admission Council, no deposit is required before April 1. Admitted students will be notified of specific seat deposit deadlines. Failure to submit these deposits in a timely manner will result in revocation of the admission offer.

International Students

Applicants who have received some or all of their post-secondary education in a foreign country must complete the standard application and submit all foreign transcripts through LSAC CAS. TOEFL reports demonstrating proficiency in English must also be submitted directly to LSAC. More information on the application process may be found on our website.

Transfer Students

Students who have satisfactorily completed a substantial portion of the traditional first year curriculum at an American Bar Association (ABA) accredited law school may apply for admission as advanced students. Information about admission and the transferring of credits from another ABA approved law school is available on the law school website.

Visiting Students

Students in good standing at another law school may apply for admission as a visiting student. Students may visit for any semester or an entire

academic year. The application procedures for visiting students may be found on the law school website.

College of Medicine

The Degree of Doctor of Medicine (MD)

Specialization, Program of Study: Medicine

Degree Awarded: MD

MD Program Contact:

College of Medicine - Office of Admissions

Texas A&M University Health Science Center

8447 Riverside Parkway

Bryan, Texas 77807

(979) 436-0237

admissions@medicine.tamhsc.edu

General Admissions Requirements

Please review all dates and deadlines on the College of Medicine

Admissions website: <https://medicine.tamhsc.edu/admissions/index.html>

- At least 90 credit hours of undergraduate coursework, preferably a baccalaureate degree, at a U.S. accredited college or university
- 47 credit hours of prerequisite courses in English, Statistics, Biology, Biochemistry, General and Organic Chemistry and Physics
- Medical College Admissions Test (MCAT)
- Application via the Texas Medical and Dental Schools Application Service (TMDSAS) and the American Medical College Application Service (AMCAS) for the MD/PhD program
- College of Medicine Secondary Application
- Criminal Background Check with results deemed favorable

The Degree of Doctor of Medicine and Doctor of Philosophy (MD/PhD)

Specialization, Program of Study: Medicine and PhD

Degree Awarded: MD/PhD

MD/PhD Program Contact:

College of Medicine - Office of Graduate Studies

Texas A&M University Health Science Center

8447 Riverside Parkway

Bryan, Texas 77807

(979) 436-0314

General Admissions Requirements

Please review all dates and deadlines on the MD/PhD Application

Information website: <https://medicine.tamhsc.edu/md-phd/prospective/apply.html>

Applicants must meet all general admission requirements posted for the MD program as well as the following requirements:

- Application via the Texas Medical and Dental Schools Application Service (TMDSAS) College of Medicine Secondary Application directed to applicants of this program
- Application via the American Medical College Application Service (AMCAS)

- A Bachelor's degree from an accredited institution in the U.S. and/or its territories;
- U.S. citizenship or permanent residency (Green Card holders). However, Canadian students are considered for admission provided they have successfully completed 90 credit hours or earned a baccalaureate degree at a fully accredited Canadian college or university;
- An outstanding academic record;
- An above average MCAT performance;
- Significant research experience; and
- Interviews with members of the MD/PhD Steering Committee and the COM Admissions Committee.
- Significant research experience.

College of Medicine's MD and MD/PhD Program Admission Information

| | |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application Fee | <ul style="list-style-type: none"> • MD # Texas Medical and Dental Schools Application Service (TMDSAS) - \$150 non-refundable fee for all applicants regardless of the number of school designations • MD/PhD # American Medical College Application Service (AMCAS) - \$160 for the first school. Additional school designations are \$38 each. • Both Programs # College of Medicine Secondary Application - \$60 non-refundable fee |
| Previous Degree | <ul style="list-style-type: none"> • At least 90 SCHs from a fully accredited college or university in the U.S. or its territories including specific subject requirements • Baccalaureate degree preferred before enrolling. • Official transcript of all undergraduate and graduate coursework. |
| Undergraduate Cumulative GPA | <ul style="list-style-type: none"> • Completion of set core curriculum with competitive GPA (Matriculants Avg. GPA 3.70) • Admission is highly competitive |
| Medical College Admission Test (MCAT) | <ul style="list-style-type: none"> • MD # Official score required. The Association of American Medical Colleges (AAMC) must report all administrations of the MCAT directly to TMDSAS. #The MCAT must have been taken no earlier than five years before the expected date of enrollment. **Matriculants Avg. MCAT 510 (84%-tile) |

American Medical College
Application Service (AMCAS)

- MD/PhD
- # Applicants must complete the primary AMCAS application and complete the COM Secondary Application. To submit a complete secondary application, M.D./Ph.D. applicants must answer the section of supplemental questions specifically directed to applicants of the program.
- # Applicants will not be considered for evaluation until the AMCAS and COM secondary application are complete and three letters of recommendation are received. Applicants who want to be considered for the M.D. only program must submit a TMDAS application in addition to the AMCAS application. Please note: Applicants cannot apply to the M.D. only program through AMCAS.

International Requirements¹

- Consideration is given only to applicants who are U.S. permanent residents (Green Card Bearers) or who are in the process of gaining U.S. permanent residency and officially receive U.S. permanent residency by the time of medical school enrollment
- At least 90 semester credit hours from a fully accredited college or university in the U.S. or its territories including specific course requirements.
- Baccalaureate degree preferred before enrolling from a fully accredited college or university in the U.S.

Specific Program Requirements

- MD
- # One Health Professions Advisory Committee Packet or Three individual letters of evaluation
- # Highly recommended that evaluators be current or former professors
- # Three letters of recommendation (LOR), at least one from a current faculty mentor
- MD/PhD
- # Three letters of evaluation from research mentors
- # Please review all admission requirements on the MD/PhD Application Information website at <https://medicine.tamhsc.edu/md-phd/prospective/index.html>
- Both Programs
- # Personal interview required and invitations based on the strengths assessed in the screening process.

Undergraduate Course Requirements^{1 2}

| Code | Title | Semester Credit Hours |
|-------------------------------|-----------------------------------------------|-----------------------|
| General | 8 semester credit hours (or 12 quarter hours) | 8 |
| Biology (with labs) | | |
| Advanced Biological Sciences | 6 semester credit hours (or 9 quarter hours) | 6 |
| General Chemistry (with labs) | 8 semester credit hours (or 12 quarter hours) | 8 |
| Organic Chemistry (with labs) | 8 semester credit hours (or 12 quarter hours) | 8 |
| General Physics (with labs) | 8 semester credit hours (or 12 quarter hours) | 8 |
| Math-Based Statistics | 3 semester credit hours (or 5 quarter hours) | 3 |
| English | 6 semester credit hours (or 9 quarter hours) | 6 |
| Total Semester Credit Hours | | 47 |

¹ 3 semester credit hours or 5 quarter hours of Biochemistry is required and may be used towards fulfillment of the Advanced Biological Sciences requirement.

² Please review all course information on the Undergraduate Course Requirements, particularly course competencies for Biochemistry and Statistics. Important course information available on the following website: <https://medicine.tamhsc.edu/admissions/apply/index.html>.

College of Nursing

College of Nursing Admission Requirements (Master of Science in Nursing)

| | |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application Fee | Nursing CAS Application \$70 non-refundable fee Apply Texas Graduate Application \$65 non-refundable application fee for U.S. citizens and permanent residents or \$90 for international applicants |
| Previous Degree | Must hold baccalaureate degree in nursing from a regionally accredited college or university (degrees from institutions outside the U.S. are evaluated for equivalency to U.S. degree) B.S.N. degree must be from a program accredited by either the National League for Nursing or the Commission on Collegiate Nursing Education |
| Minimum Cumulative GPA | Minimum cumulative 3.0 GPA in last 60 hours of undergraduate coursework Minimum undergradate and graduate 3.0 GPA Elementary or Introductory Statistics course (minimum grade of "C") |
| Nationally Scored Test (GRE/ADAT) | No admission test required |
| English Language Requirements | All international applicants must show English language proficiency by meeting requirements as indicated on the College of Nursing website |
| Foreign Degree Transcripts | Applicants with foreign transcripts must submit their international academic credentials to World Education Services (WES), Educational Credential Evaluations, Inc. (ECE) or Global Credential Evaluators, Inc. (GCE) for a course by course evaluation and U.S. equivalency determination |
| Other Requirements | Must hold a current, unencumbered Registered Nurse license or show proof of conferred degree before entry and active RN license by the end of the first semester if admitted to the program Official Transcripts Three Professional References Curriculum Vitae or Resume Essay Consult program home pages for specific information regarding each M.S.N. specialty area |

Irma Lerma Rangel College of Pharmacy

Irma Lerma Rangel College of Pharmacy (PharmD)

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application Fee | <ul style="list-style-type: none"> Pharmacy College Admission Service Application (PharmCAS) fee (\$175 for the first pharmacy school and increases for each additional school) Supplemental Application fee (\$100 non-refundable) |
| Previous Degree | <ul style="list-style-type: none"> Degree not required Minimum of 74 SCHs college credit from a regionally-accredited college or university Official transcripts from each academic institution attended. Transcripts are to be sent directly to PharmCAS. See instructions on the PharmCAS website: http://www.pharmcas.org/ |
| Undergraduate Cumulative GPA | Minimum cumulative GPA of 2.75 or higher |
| Pharmacy College Admission Test (PCAT) | <ul style="list-style-type: none"> Preferred composite score of 40 percentile Official PCAT scores must be sent directly to PharmCAS (School Code: 104) |
| International Requirements ¹ | <ul style="list-style-type: none"> Test of English as a Foreign Language (TOEFL) 550 Paper; or 213 Computer-based; or 80 Internet based Official transcript(s) from all colleges or universities attended with an original signature of a school official or an original school seal (If transcripts are in a language other than English, an official translation from the school, a recognized translator or translation verified by a United States Embassy or Consulate must accompany the native language transcript) |
| Other Requirements | <ul style="list-style-type: none"> Multiple Mini Interviews required Three PharmCAS recommendation forms are required from an applicant. Prospective students should submit two recommendations from college professors, and one from an employer, advisor, or college or university administrator (mentor or teaching assistant recommendation forms are not accepted). Please see the PharmCAS school page for further clarification |

¹ In order to be admitted to graduate and professional studies at Texas A&M University, submit international transcripts translated in English by a certified English translator, which can usually be accomplished at the nearest American Embassy in the student's country. International transcripts for all Health Science Center (HSC) components are evaluated by and any required fees are paid to the Texas A&M University International Student Services (<http://international.tamu.edu/iss>).

School of Public Health

School of Public Health (MPH, MHA, PhD and DrPH)

Application Fee

- Applications are accepted through Schools of Public Health Application Service (SOPHAS) and Healthcare Administration, Management & Policy Centralized Application Service (HAMPCAS). Fees are established by the application service agencies.

Previous Degree

- MPH/MHA/PhD - Must hold baccalaureate degree or higher from a regionally accredited college or university (degrees from institutions outside the US are evaluated for equivalency to US degree)
- DrPH - Must hold master's degree or higher from a regionally accredited college or university (degrees from institutions outside the US are evaluated for equivalency to US degree)

Minimum Cumulative GPA

Epidemiology-- 3.0
Biostatistics-- 3.0
Health Promotion & Community Health Sciences -- 2.75

Admission Test

Official scores required for the GRE or on other national tests approved by the graduate program

International Requirements

- All international applicants must submit their international academic credentials to World Education Services (WES) for a course by course evaluation and US equivalency determination
- All international applicants must show English language proficiency by meeting one of the following requirements below:
 - # Graduate Record Examination (GRE) verbal score of 153 or higher
 - # International English Language Testing System (IELTS) band score of 7.0 or higher
 - # The Test of English as a Foreign Language (TOEFL) of 95 on internet based examination

Other Requirements

- Three Letters of Recommendation
- Statement of Purpose
- Curriculum Vita or Resume
- Official Transcripts
- Each department and/or program may have additional requirements. Please consult the departmental homepages for information.

College of Veterinary Medicine and Biomedical Sciences

College of Veterinary Medicine and Biomedical Sciences (DVM)

Application Fee

- \$75 non-refundable fee
- \$140 non-refundable fee to Texas Medical and Dental Schools Application Service (TMDSAS)

Previous Degree

An applicant is expected to have completed at least 42 hours of coursework before submitting an application. Applicants must have 56 hours prior to admission into the professional program. Applicants are requested to have the majority of their science prerequisites completed by the semester of application.

Undergraduate Cumulative GPA

Minimum of all of the following: 2.90 overall, 3.10 last 45 SCH, and 2.90 overall sciences. Completion of set core curriculum with GPA as high as possible.

Graduate Record Examination (GRE) Official scores required

International Requirements¹

Priority consideration is given to qualified applicants who are residents of Texas and U.S. citizens, or residents of Texas who live in the U.S. under a visa permitting permanent residence.

Other Requirements

Application interview at the option of the Selection Committee

¹ In order to be admitted to graduate and professional studies at Texas A&M University, submit international transcripts translated in English by a certified English translator, which can usually be accomplished at the nearest American Embassy in the student's country. International transcripts for all Health Science Center (HSC) components are evaluated by and any required fees are paid to the Texas A&M University International Student Services (<http://iss.tamu.edu/>).

Admission Requirements—Professional Curriculum

The admission recommendations and requirements are reconsidered annually out of phase with this graduate and professional catalog. The student is encouraged to contact the College of Veterinary Medicine & Biomedical Sciences or visit our website at <http://vetmed.tamu.edu> for

the most updated specific information concerning professional veterinary medical program admissions.

There is no separate curriculum in preveterinary medicine; therefore, a student entering Texas A&M University, who is interested in a career in veterinary medicine, must choose a specific course of study offered by one of the colleges of the University.

The student should select a curriculum in which the preprofessional course recommendations listed below can be completed as well as pursue a degree in another field in the event that admission into the professional curriculum in veterinary medicine is not achieved.

Counsel for students who wish to qualify for the professional curriculum in veterinary medicine is available in the College of Veterinary Medicine & Biomedical Sciences regardless of the curriculum in which the student is registered. Students currently attending Texas A&M University are encouraged to contact the Office of Professional School Advising for more information.

Preprofessional Course Requirements

The minimal number of college or university credits required for admission into the professional curriculum is 56 semester hours. Applicants must have completed or have in progress approximately 42 credit hours during the semester they make application. Because there is no specific degree associated with the preprofessional study plan, students are encouraged to pursue a specific degree program that meets his/her individual interest. To be eligible for the Bachelor of Science degree at Texas A&M University, certain requirements must be met (see University Core Curriculum requirements). We strongly encourage that courses be chosen with a counselor at the applicant's institution, or through contact with an academic advisor at the College of Veterinary Medicine & Biomedical Sciences, Texas A&M University, (979) 862-1169.

| Code | Title | Semester Credit Hours |
|---------------------------------------------------|-------------------------------------------------------|-----------------------|
| Life Sciences | | |
| BIOL 111 | Introductory Biology I | 4 |
| Select one of the following: | | 4 |
| VTPB 405 | Biomedical Microbiology | |
| BIOL 351 | Fundamentals of Microbiology | |
| BIOL 206 | Introductory Microbiology | |
| GENE 301 | Comprehensive Genetics | 3 |
| | or GENE 320/or Biomedical Genetics | |
| | BIMS 320 | |
| Select one of the following: | | 3 |
| ANSC 318 | Animal Feeds and Feeding | |
| ANSC 320 | Animal Nutrition and Feeding | |
| Chemical/Physical Sciences and Mathematics | | |
| CHEM 119 | Fundamentals of Chemistry I | 4 |
| CHEM 120 | Fundamentals of Chemistry II | 4 |
| CHEM 227 & CHEM 237 | Organic Chemistry I and Organic Chemistry Laboratory | 4 |
| CHEM 228 & CHEM 238 | Organic Chemistry II and Organic Chemistry Laboratory | 4 |
| Select one of the following: | | 3 |
| STAT 301 | Introduction to Biometry | |
| STAT 302 | Statistical Methods | |

| | | |
|-------------------------------------|--------------------------------------------|---|
| STAT 303 | Statistical Methods | |
| PHYS 201 & PHYS 202 | College Physics and College Physics | 8 |
| BICH 410 | Comprehensive Biochemistry I (Fall course) | 3 |
| or VTPB 489 or Special Topics in... | | |
| Non-sciences | | |
| ENGL 104 | Composition and Rhetoric | 3 |
| Select one of the following: | | 3 |
| COMM 203 | Public Speaking | |
| COMM 315 | Interpersonal Communication | |
| COMM 325 | Persuasion | |
| ENGL 210 | Technical and Business Writing | 3 |
| PSYC 107 | Introduction to Psychology | 3 |

Additional Preprofessional Course Recommendations

A required preprofessional course must have a final grade of C or better.

Students may take the preprofessional required courses at any accredited institution of higher education. However, the course must be equivalent in subject content and credits to its counterpart at Texas A&M University.

To be a qualified applicant, 42 semester hours of the preprofessional course requirements must be completed or in progress during the fall semester in which application is made. **All preprofessional required courses must be completed by the end of the spring semester.**

Formal Application

Applications are available online through our website at <http://vetmed.tamu.edu/dvm> after May 1 of each year and must be submitted on or before 5 p.m. (CST) September 30 in order to receive consideration for the succeeding fall class. Additional application information may be obtained by calling the Dean's Office at (979) 862-1169 or on the website <http://vetmed.tamu.edu>.

Grade Point Ratio

The applicant must have a minimum or better for all of the following grade point ratios: 2.90 overall, 3.10 during the last 45 semester credits completed, and 2.90 overall sciences.

Graduate Record Examination (GRE)

Applicants must take the GRE on or before September 30. Failure to do so may disqualify the applicant for consideration during the current cycle. Please refer to our website at <http://vetmed.tamu.edu> for further information. In accordance with Texas A&M University Office of Admissions policy, GRE scores more than 5 years old will not be accepted.

Texas A&M University Qatar Campus Admission

Admissions information, including access to the online application for admission (during admission periods), is available at www.qatar.tamu.edu/admissions/graduate-admissions/. Additional information may be obtained by calling (+974) 4423-0135, or by visiting the Office of Research and Graduate Studies at the Engineering Building

located in Education City, Doha, Qatar. To be considered a candidate for admission to Texas A&M at Qatar, the prospective student must formally apply by submitting all of the required documents and test scores and meeting all of the admission requirements. Required documents may include the following:

1. Completed application.
2. Passport copy (resident permit if required).
3. Official college/university transcripts.
4. Official test scores (GRE, TOEFL or IELTS).
5. Statement of purpose.
6. Resume/curriculum vitae.
7. Letters of recommendation.
8. Application fee.

International Admission Status

An applicant from another country seeking admission to graduate studies must meet the same requirements for admission as applicants from the United States. In addition, he or she must demonstrate the ability to read, write, speak and understand the English language. A prospective student whose native language is not English may take either the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or the PTE Academic exam. All exams are offered at locations around the world. Applications for these exams together with additional information about these examinations may be found on their websites; TOEFL information may be obtained at <http://www.ets.org/toefl>, IELTS information from <http://www.ielts.org/> and PTE Academic from <http://pearsonpte.com/>. Applicants from non-English speaking countries must present a TOEFL score of at least 550 paper-based, 80 Internet-based, an IELTS score of at least 6.0 overall band or a PTE Academic score of 53 to be admitted to graduate studies and receive the documents necessary to apply for a visa. An applicant *may* be exempt from the English Language Proficiency requirements by completing all credits of a baccalaureate degree or higher in the United States or scoring a 400 or 146 (on new scale) or higher on the Verbal section of the GRE. Some departments reserve the right to require a TOEFL/IELTS/PTE Academic score even though it may be waived by one of the above criteria.

Additionally, applicants who are citizens of the following countries will be exempt from the English Language Proficiency requirement for admission and considered English Language Proficiency (ELP) Verified:

- American Samoa
- Anguilla
- Antigua and Barbuda
- Australia
- Bahamas
- Barbados
- Belize
- Bermuda
- British Virgin Islands
- Canada (except Quebec)
- Cayman Islands
- Dominica
- Federated States of Micronesia
- Gambia
- Ghana

- Gibraltar
- Grenada
- Guyana
- Ireland
- Jamaica
- Liberia
- New Zealand
- Nigeria
- Saint Kitts and Nevis
- Saint Lucia
- Trinidad/Tobago
- Turks and Caicos Islands
- United Kingdom

NOTE: Applicants from these countries will be considered ELP Verified, but must still follow the ELP Certification process to serve as Teaching Assistants.

Official TOEFL scores are reported directly by the Educational Testing Service to Texas A&M University using institution code 6003. The departmental code is not necessary.

IELTS scores should be sent electronically from the test center to:

Admissions Processing
Texas A&M University
P.O. Box 40002
College Station, TX 77842-4002

PTE Academic scores must be assigned to Texas A&M University electronically via the PTE score reporting website. To send your scores, log in to the Pearson portal and follow the steps online.

English Language Proficiency Requirements

All international graduate students whose native language is not English must meet minimum English proficiency standards.

To achieve admission, international graduate students must attain English proficiency verification.

To become eligible to teach in positions such as Graduate Assistant-Teaching, Instructor, Lecturer, etc., the State of Texas Education Code (Section 51-917) requires that international graduate students attain English proficiency certification.

Citizens of certain English-speaking countries are exempt from the verification requirement. Refer to the list on the Office of Admissions (<http://admissions.tamu.edu/international/graduate>) website.

Refer to the Office of Graduate and Professional Studies website for more information regarding English Language Proficiency (<http://ogaps.tamu.edu/New-Current-Students/English-Language-Proficiency>) requirements.

English Proficiency **Verification** can be attained using the following:

- a TOEFL score of at least 80 on TOEFL iBT (550 paper-based), or
- an IELTS score of at least 6.0, or
- a GRE Verbal Reasoning score of at least 146 (400 on the old scale), or
- a GMAT Verbal score of at least 22, or

- a PTE Academic score of at least 53, or
- Beginning with Summer/Fall 2017 enrollment, the Office of Admissions will exempt applicants of certain English-speaking countries from the English proficiency requirement for admission and will consider these students English Language Proficiency Verified. Refer to the list on the Office of Admissions (<http://admissions.tamu.edu/international/graduate>) website. Acquiring alternative verification (<http://ogaps.tamu.edu/New-Current-Students/English-Language-Proficiency/Alternative-Verification-Guidelines>) during the admission process from the Office of Graduate and Professional Studies via a departmental request. An international graduate student holding a master's degree from an accredited institution located in the U.S. qualifies for alternative verification.

Individual colleges or departments may choose to establish test standards that exceed the University minimums listed above. Scores from TOEFL, IELTS and PTE examinations administered more than two years before submission of the admissions application are not eligible for use in attaining English proficiency verification.

International Graduate Students Serving in Teaching Positions

To become eligible to hold a teaching position at Texas A&M University such as Graduate Assistant-Teaching, Instructor, Lecturer, etc., the State of Texas requires that international graduate students attain English proficiency certification either before or after enrollment.

International graduate students who wish to serve in teaching positions can certify for English proficiency before enrollment by achieving requisite scores on the oral component of the following standardized tests: TOEFL, IELTS or PTE exams. [See chart below.] Also, departments may request alternative certification under certain conditions [See details below].

If international graduate students who wish to serve in teaching positions do not achieve requisite standardized test scores prior to enrollment, they can certify by passing the oral skills assessment of the English Language Proficiency Exam (ELPE) offered by Testing Services on the Texas A&M campus.

Eligibility levels for international graduate students serving in teaching positions:

Level 1: Students eligible for teaching assignments

Level 2: Students conditionally eligible for teaching assignments for one semester only, but must simultaneously participate in Texas A&M University Center for Teaching Excellence English Language Proficiency (CTE-ELP) instruction and achieve a certifying score on the oral skills assessment of the ELPE by the end of the semester.

Level 3: Students not eligible for teaching assignment. Students should participate in spoken language training (such as those offered by TAMU CTE-ELP or other independent English language instruction providers) to assist them in meeting English language proficiency requirements.

| Global Standardized Tests | | | | Locally Administered Exam (on Texas A&M campus) ELPE Oral Exam |
|---------------------------|------------------------|------------------------|----------------------|-------------------------------------------------------------------|
| Level # | TOEFL Speaking Section | IELTS Speaking Section | PTE Speaking Section | |
| 1 | 26-30 | >=8.0 | >=85 | >=80 |
| 2 | 23-25 | 7.0-7.5 | 75-84 | >=75 |
| 3 | <23 | <7.0 | <75 | <75 |

Alternative Certification for international graduate students serving in teaching positions

Departments have the option to request alternative certification from the Office of Graduate and Professional Studies on behalf of an international graduate student who wishes to serve in a teaching position.

- An international graduate student who has received a baccalaureate degree following four years of study at an accredited institution located in the U.S. qualifies for alternative certification.
- Departments can request alternative certification for an international graduate student who is a citizen of certain English-speaking countries listed under required documents on the Office of Admissions (<http://admissions.tamu.edu/international/graduate>) website.
- All other requests for alternative certification require strong department justification. The Office of Graduate and Professional Studies will evaluate requests on a case-by-case basis.

For more information please visit, <https://www.qatar.tamu.edu/admissions/graduate-admissions>.

International Admission Status

Non-degree Status International Students

A postbaccalaureate non-degree status student (G6 classification) must meet the graduate English Language Proficiency requirements unless he/she is included in one of the following categories:

1. A postbaccalaureate non-degree status student admitted to Texas A&M under a special arrangement approved by the Vice President for Enrollment Management or a Memorandum of Agreement (MOA) that postpones the English Language Proficiency requirements for the duration of the program. (For this category, the student's Departmental Graduate Advisor must request the postponement through the Office of Graduate and Professional Studies.)
2. A reciprocal educational exchange program student admitted to Texas A&M through the Education Abroad Programs Office. (For this category, postponement of the English proficiency requirement for the duration of the reciprocal educational exchange program will be done by the Office of Admissions.) Please contact Education Abroad Programs for additional information about this type of student.

An appeal for a postbaccalaureate international non-degree status student should be made through the Departmental Graduate Advisor.

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Dean of Faculties and Associate Provost - Blanca Lupiani

Associate Provost for Academic Affairs - Michael T. Stephenson

Associate Provost for Graduate and Professional Studies - Karen L. Butler-Purry

Associate Provost for Undergraduate Studies - Ann L. Kenimer

Associate Vice President for Administration and Academic Affairs - Deena J. McConnell

Associate Vice President for External Relations - Chad E. Wootton

Objectives of Graduate and Professional Studies

The Office of Graduate and Professional Studies (OGAPS) maintains the official record for each graduate student, and in this role serves as the primary administrative body and overarching source of information for graduate education. Once a graduate student is accepted by an academic department, school or college, OGAPS assists and facilitates progression toward completion of a graduate degree through maintenance of all official records. OGAPS interacts directly with the Graduate Council and Graduate Operations Committee to set minimal University guidelines, and all departments and colleges use these as a framework for operation, only setting more stringent standards when needed and appropriate. Clearance for graduation, including final review of theses, dissertations, and records of study when required, is performed by OGAPS, but the Office of the Registrar is responsible for issuing all transcripts.

The overall objective of graduate study is to provide a student with the intellectual depth and breadth, and appropriate training and professional development necessary to pursue a productive career in a profession and/or in various fields of teaching and research and in other ways make a larger contribution to society than would be otherwise possible.

A graduate student is admitted for graduate study in a department to pursue generally only one of the university graduate programs at a time. Such programs are usually accessible by admission into a single department. A select number of dual degree programs allow a student the opportunity to pursue two master's degrees simultaneously. For a listing of the approved dual degree programs, a student should consult the graduate catalog and his/her department. In some cases, an intercollegiate faculty oversees the programs allowing access through several departments. Each department has one or more graduate advisors who can provide information about specific programs within that department.

A student's program of graduate study usually consists of a combination of coursework, independent study and scholarly research resulting in a report, record of study, master's thesis or doctoral dissertation. In some programs, a student may be required to participate in an internship or other professional activity to satisfy particular degree requirements. Some departments require a student's participation in teaching as part of his/her degree program.

Administration of Graduate and Professional Studies

The graduate faculty at Texas A&M University consists of the President, the Provost and Executive Vice President, the Associate Provosts, the Deans of all subject-matter colleges, selected Directors and properly qualified academic groups. Members of the graduate faculty participate in the graduate degree programs of the University by serving on student advisory committees and teaching graduate courses. Individuals who are not members of the graduate faculty of Texas A&M University may not teach graduate courses or serve on student advisory committees unless special approval is granted by the Office of Graduate and Professional Studies.

Office of Graduate and Professional Studies Administrative Officers

Associate Provost for Graduate and Professional Studies - Karen L. Butler-Purry, Ph.D.

Senior Assistant Provost for Graduate and Professional Studies – George B. Cunningham, Ph.D.

Graduate Council

The Graduate Council is composed of representatives from the graduate faculty at Texas A&M. The Council develops and maintains policies and procedures pertaining to graduate programs at the university. The Council's function includes long-range planning, recommendation of new programs and courses, evaluation of existing programs and courses, and facilitation of university accreditation. Requests for new, changes, or withdrawals of courses or programs are submitted through the Curricular Approval Request System, and questions may be sent via e-mail to gradcounciladmin@tamu.edu.

The Graduate Council shall review all curricular requests pertaining to the graduate and professional academic programs, shall be responsible for the quality and development of the graduate instruction and programs and shall advise the Associate Provost for Graduate and Professional Studies on all graduate and professional program matters. The Graduate Council shall communicate in writing, through its secretary, its recommendations to the Faculty Senate.

Membership shall consist of one representative from each College and off campus academic unit, who shall be selected by the Faculty Senate Committee on Committees after consultation with the College deans and caucuses (chairs of college graduate instruction committees and associate deans for graduate programs shall be considered for appointment); two representatives of the Graduate Faculty; two graduate students; and the Associate Provost for Graduate and Professional Studies as an Ex-Officio member. All faculty members shall be members of the Graduate Faculty.

All of the above members except the Associate Provost shall be voting members. In the absence of the appointed member, a substitute may vote on behalf of that unit.

Included also among Graduate Council membership in a non-voting capacity are the following: Curricular Services; Library Council – Evans; Library - Medical; Office of Graduate and Professional Studies – Associate Provost; Graduate Studies - TAMU Galveston; Office of Graduate and Professional Studies - Representative, Office of Graduate and Professional Studies - Staff, serving as Administrative Assistant.

Graduate Council Members

November 2018 – October 2019 (As of January 24, 2019)

* Indicates non-voting member

Chair, Scott Miller
 Vice Chair, Jeffery Hatala
 David Reed
 Dawn Jourdan
 Blease Graham
 Kevin Moore
 Larry Bellinger
 Beverly Irby
 Mark Zoran
 Harry Hogan
 Christian Brannstrom
 Kristan Poirot
 Warren Zimmer
 Susan Dormire

Mansoor Khan
 Michael Criscitiello
 Dennis Jansen
 Charlotte Ku
 Graduate Student Representative – Purna Doddapaneni
 Graduate Student Representative – Zane Sheehan
 Karen Butler-Purry *
 Sandra Williams *
 Paula Sullenger *
 Arwen Meador *
 Nicole Kinslow *
 LaRhesa Johnson*
 Russell Ramirez*

Graduate Operations Committee (GOC)

The Graduate Operations Committee serves as an advisory body to the Associate Provost for Graduate and Professional Studies. It focuses primarily on operations and procedures regarding administration of graduate education throughout the University. The Graduate Operations Committee serves as a forum for the Associate Deans in each College to discuss issues/concerns of an operational nature, and to recommend procedures, which are as uniform as possible across Colleges, to resolve these issues/concerns. The Graduate Operations Committee works very closely with the Graduate Council to coordinate all curriculum and policy issues. It also works closely with the Academic Operations Committee to consider recommendations concerning operations and procedures.

Each academic College is represented on the Graduate Operations Committee by the Associate Dean (or other named individual) responsible for graduate studies in that college.

Graduate Operations Committee Members

(September 2018 - August 2019)

Karen Butler-Purry
 Larry Bellinger
 Cole Blease Graham
 Christian Brannstrom
 Robert Burghardt
 Shannon Deer
 Purna Doddapaneni, GPSC President
 Maria Escobar-Lemmons
 Harry Hogan
 Beverly Irby
 Dawn Jourdan
 Mansoor Kahn
 Charlotte Ku
 Debra Matthews
 Antonietta Quigg
 Dave W. Reed
 Ivan Rusyn
 John O. Spengler
 Amy Waer
 Mark Zoran

College Committees on Graduate Instruction

Responsible for making recommendations concerning graduate course offerings, general policies on graduate instruction and for other matters pertaining to graduate studies in each college.

Committees on Graduate Instruction

Agriculture and Life Sciences

David W. Reed, Chair
 Spencer Behmer
 Morgan Farness
 Mary Bryk
 Craig Coates
 Sandun Fernando
 Del Gatlin
 Dirk Hays
 Patricia Klein
 David Leatham
 Georgianne Moore
 Wes Osburn
 Corliss Outley
 James Petrick
 Tracy Rutherford
 Victoria Salin
 Won Bo Shim
 Dorothy Shippen
 Loren Skow
 Michel Slotman
 Wayne C. Smith
 Stephen Talcott
 Pete Teel
 Dawn Kerstetter

Architecture

Leslie Feigenbaum, Chair
 Dawn Jourdan
 Phil Lewis
 Barbara Klein
 Shelley Holliday
 Nancy Klein
 Shelley Smith
 Eric Bardenhagen
 Ann McNamara
 George Rogers
 Dave Wentling
 Katie Reed

Bush School of Government

Blease Graham, Chair
 Gregory Gause
 Deborah L. Kerr
 Ren Mu
 Lori Taylor

Mays Business School

PhD

Duane Ireland, Chair
 Cindy Devers
 Alina Sorescu
 Hwagyun Kim
 Nathan Sharp
 Chelliah Skrisandarajah

MBA, Executive MBA and Professional MBA

Arvind Mahajan, Chair
Bala Shetty
Mary Lea McAnnaly
Ramanathan, Suresh
Devers, Cynthia

MS

Shannon Deer, Chair
Cydney Donnell
Steve McDaniel
Michael Shaub
Ron Chandler
Veronica Stilley

Dentistry

Larry Bellinger, Chair
Robert Ausburger
Yi-Shing (Lisa) Cheng
Seok Hwan (Aaron) Cho
Carolyn Kerins
Madhu (Matt) Nair
Likith Reddy
William Stenberg
Kathy Svoboda
Larry Tadlock
Peggy Timothé
Amirali Zandinejad

Education and Human Development

Beverly J. Irby, Chair
Marlene Dixon
Lizette Ojeda
Khalil Dirani
Patrick Slaterry

College of Engineering

Harry Hogan, Chair
Diego Donzis
John Valasek
Sandun D. Fernando
Roland Kaunas
Arul Jayaraman
Victor Ugaz
Yunlong Zhang
Duncan M. "Hank" Walker
Scott Miller
Jiang Hu
Jorge Leon
Bharani Nagarathnam
Alfredo Garcia
Timothy Jacobs
Michael Demkowicz
Pavel Tsvetkov
Jeffrey Falzarano
Jenn-Tai Liang

Geosciences

Christian Brannstrom, Chair
Mark E. Everett
John R. (Rick) Giardino

Inci Güneralp
Istvan Szunyogh
Chrissy Stover Wiederwohl

College of Law

Charlotte Ku, Chair
William Byrnes
Milan Markovic
Mark Burge
Terri Helge

Liberal Arts

Maria Escobar-Lemmon, Chair
Lori Wright
Kristan Poirot
Silvana Krasteva
Sally Robinson
Esther Quintana
Lorien Foote
David Donkor
Kenneth Easwaran
Matthew Fuhrmann
Takashi Yamauchi
Holly Foster
Harland Prechel

College of Medicine

Warren Zimmer, Chair
Marquita Adrian
Jordyn Michalik (GSO Student Representative)
Jiyayi Lu (GSO Student Representative)
Andrea Trache
Ryang H. Lee
Julian Leibowitz
Cynthia A. Lewis
Cynthia Meininger
Margie Moczygemba
David J. Reiner
Ava Brozovich (MD/PhD Student Representative)
Jun Wang
Robbie Watson
Gregg Wells
Emily Wilson
Ursula Winzer-Serhan
Debbie Lynn
Amy Waer

School of Public Health

Szu-hsuan (Sherry) Lin, Chair
Bernard Appiah, Vice Chair
Robert Garcia
Angela Clendenin

Science

Mark J. Zoran, Chair
Peter B. Howard
Jianhua Huang
Rene Garcia
Christian Hilty

Joseph H. Ross

Veterinary Medicine and Biomedical Sciences

Michael Criscitiello, Chair

Cristine Budke

Noah Cohen

Scott Dindot

Dana Gaddy

Christine Heaps

Charles Long

Chris Seabury

Jörg Steiner

Texas A&M University Galveston Campus

Antonieta Quigg, Chair

Anna Armitage

Timothy Dellapenna

Frederic Pearl

Wesley Highfield

Joan Mileski

Jay Rooker

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The Academy for Future Faculty

<http://cte.tamu.edu/Graduate-Student-Support>

The Academy for Future Faculty (AFF), one of several CIRT@TAMU programs, provides professional development in teaching for graduate students preparing for a career in higher education. Anchored by faculty mentorship and featuring weekly seminars and workshops, AFF events are free and open to all graduate students and post-doctoral trainees in the Texas A&M University academic community. Participants may choose to attend select events or to complete all requirements for the Academy for Future Faculty Fellow certificate, which also qualifies the student for a CIRT* Associate certificate. Participants have the option to complete the Academy for Future Faculty Fellow Certificate Program in one or two semesters, or even over two academic years.

While the AFF serves as a supplement to research-oriented programs by assisting graduate students with the teaching component of their career preparation, it is not teaching assistant training *per se*. Instead, the AFF provides broader benefits applicable to all graduate students, whether

currently teaching or preparing for teaching in the future. These benefits include:

- Opportunity to learn from a diverse pool of professors known for excellence in teaching.
- Mentorship in the area of teaching in higher education environments.
- Exploration of career paths.
- Development of teaching portfolio materials for use in academic job searches.
- Advanced professional development opportunities for AFF Fellows: earn the Senior Fellow Certificate, leadership opportunities, research projects, and participation in forums or learning communities on college teaching.

Interested graduate students are encouraged to visit the website <http://cte.tamu.edu/Graduate-Student-Support> or find us on Facebook. The Academy for Future Faculty is co-sponsored by the Office of Graduate and Professional Studies and the Center for Teaching Excellence.

Off-Campus Student Services

<http://agoss.tamu.edu> <http://studentlife.tamu.edu>

Programs include:

- **Housing Fair:** Each fall 60+ housing representatives from the B/CS area gather to provide an opportunity for students to obtain information about possible housing options.
- **Off Campus Survival Manual (OCSM):** A yearly publication with information geared toward introducing students to the community. It includes sections with information regarding leases, transportation, security deposits, and the B/CS community, and more.
- **Aggie Search:** An online tool providing students a place to view and post apartment and property listings, as well as roommate search options.

Becky Gates Children's Center

<http://bgcc.tamu.edu>

The Becky Gates Children's Center (BGCC) is a licensed and accredited early childhood educational program located on the Texas A&M University campus, 1125 Hensel Drive. We are for Texas A&M University students, faculty, and staff affiliated with main campus. BGCC is licensed for 165 children ages 12 months - 6 years, and we are open M-F, 7:30 a.m. - 5:30 p.m., year-round.

Becky Gates Children's Center philosophy aligns with the HighScope Curriculum. We believe children learn best through active participatory play to construct their knowledge. Active learning is at the core of adult-child interactions, the learning environment, daily routines, and observational assessment. BGCC supports children's play, uses encouragement, uses a problem-solving approach to social conflict, and forms authentic relationships with all children.

If you are interested in enrolling your child, please visit our website, read the Family Handbook, and complete the waitlist application.

BGCC also serves as a support location for Texas A&M University students and faculty for educational and professional goals. We work

closely with different academic departments to provide educational opportunities and experiences for students. This includes observations, practicums, internships, research, projects, and field experiences. If research falls under jurisdiction of the Institutional Review Board (IRB) for Human Subjects Research we will notify families of the research and IRB approval number. If you are interested in partnering with the Becky Gates Children's Center, please contact the Director at eritter@bgcc.tamu.edu.

Center for Teaching Excellence

Established in 1983, the Center for Teaching Excellence (CTE) supports the University's commitment to excellence in teaching and learning. CTE offers consultation and support services to faculty, postdoctoral scholars, graduate students, and staff. Specifically, CTE offers a wide range of programs supporting the professional development in teaching of graduate students currently serving as teaching assistants within their departments, preparing for a career in higher education, and/or preparing for a career in industry requiring skills in public speaking and communication, instruction, and mentorship. Graduate students have the option to participate in a variety of program formats including workshops, learning communities, teaching academies, teaching conferences, individual consultation, and English language instruction. CTE works collaboratively with colleges and service organizations across campus to provide continuity of service when in support of the University's mission. Programs we provide include, but are not limited to the following: **Teaching Assistant Institute (TAI); Academy for Future Faculty (AFF); College Classroom Teaching Course; Graduate Teaching Consultant (GTC); English Language Proficiency Instruction (CTE-ELP).**

Graduate student resources can be found on the CTE website – <http://cte.tamu.edu>.

To learn more about how the CTE can be of service, contact: cte@tamu.edu.

Center for the Integration of Research, Teaching and Learning

<http://cirtl.tamu.edu/>

The Center for the Integration of Research, Teaching, and Learning (CIRTl) is a national network of universities and colleges that are focused on teaching and learning in higher education. CIRTl uses graduate education as the leverage point to develop a national STEM faculty committed to implementing and advancing effective teaching practices for diverse student audiences as part of successful professional careers. The goal of CIRTl is to improve the STEM learning of all students at every college and university, and thereby to increase the diversity in STEM fields and the STEM literacy of the nation.

Established in fall 2006, the CIRTl Network was comprised of Howard University, Michigan State University, Texas A&M University, University of Colorado at Boulder, University of Wisconsin-Madison, and Vanderbilt University. After substantial expansions in 2011 and 2016, the Network now includes 43 research universities across the nation. The diversity of these institutions – private/public; large/moderate size; majority-/minority-serving; geographic location – is by design aligned with CIRTl's mission.

As a local member of the CIRTl network, CIRTl@TAMU works collaboratively with the Office of Graduate and Professional Studies, the Center for Teaching Excellence, and the academic colleges. Through collaboration, the CIRTl@TAMU offers a range of local and national teaching and learning opportunities for graduate students in STEM and

Non-STEM fields at Texas A&M University. These opportunities help students learn and apply the principles of teaching as research in a supportive context of one or more local learning communities that are infused with the pillars of CIRTl: Learning-through-Diversity, Learning Community, and Teaching as Research. Students who engage with the network can earn CIRTl certification at the Associate, Practitioner, and Scholar levels.

More information about CIRTl@TAMU and opportunities to get involved can be found on the on the following website: <http://cirtl.tamu.edu/>

Corps of Cadets, Office of the Commandant

<http://corps.tamu.edu/>

- The Office of the Commandant is responsible for the development and execution of all programs affiliated with the Texas A&M Corps of Cadets. The Army, Navy/Marine and Air Force ROTC program offices are also facilitated within the Office of the Commandant.
- The Office of the Commandant is located in Room 102 of the Military Sciences Building (Trigon) on campus; phone (979) 845-2811.

Disability Services

<http://disability.tamu.edu>

- Makes student disability and accommodation determination decisions.
- Collaborates with faculty, staff and students to achieve access for students with disabilities.
- Facilitates accommodations including (but not limited to): exam accommodations, sign language interpreting and transcription, and classroom accommodations.
- Consults with all campus entities on providing access for students with disabilities.

Gay, Lesbian, Bisexual, and Transgender (GLBT) Resource Center

<http://glbt.tamu.edu>

- Programs include:
 - **Spirit Day:** Spirit Day is a means of speaking out against LGBTQ bullying and standing with LGBTQ youth, who disproportionately face bullying and harassment because of their identities. The Center provides Spirit Day shirts and encourages the Aggie Community to stand up for LGBTQ youth.
 - **Transgender Day of Remembrance:** On this day, the GLBT Resource Center encourages Aggies to honor the memory of those whose lives were lost in acts of anti-transgender violence.
 - **Mentorship Program:** The purpose of the GLBT Resource Center's Mentorship Program is to offer support and guidance to lesbian, gay, bisexual, transgender, queer or questioning students at Texas A&M. Students are matched with a mentor based on academic and professional interests as well as personal interests and will meet with their mentor approximately once a month.
 - **The Coming Out Monologues:** The Coming Out Monologues is an annual story-telling performance made up of current and former students, faculty, staff, and community members who identify as LGBTQ+ or allies of the community.

- **LGBT Awareness Week:** Designed to allow students to share their stories, experiences, and to foster a respectful and understanding community, GLBT Awareness Week helps Aggies better understand the diversity of their community and the global society of which they are a part.
- **Lavender Graduation Celebration:** The Lavender Graduation Celebration serves as a cultural celebration that recognizes and affirms LGBTQ+ students and their allies while acknowledging their achievements and contributions to the university.
- Presentation topics include, but are not limited to:
 - LGBTQ+ 101
 - Transgender 101
 - Organizational Inclusion
 - Resources to Create Affirming Healthcare Services for LGBTQ+ Patients
 - Custom Requests
- Resource Library (Books, Periodicals, Brochures, and Films)
- Advocacy
- Visibility

George H.W. Bush Presidential Library and Museum

<http://bush41.org/>

The George H.W. Bush Presidential Library and Museum at Texas A&M University is dedicated to preserving and making available the records and artifacts of George H.W. Bush, 41st President of the United States. We promote civic literacy and increased historical understanding of our national experience, and foster a community of public service and volunteerism. We accomplish this mission by offering:

- Rich Educational and Public Programs
- Original Museum Exhibits
- Access to our Archival Holdings
- Research Opportunities
- Special Events
- Unique Volunteer and Internship Positions
- Foundation Memberships

The George H.W. Bush Presidential Library and Museum can be found online at <http://bush41.org/> and is located at 1000 George Bush Drive West, College Station, Texas 77845. For additional information on the resources the George Bush Presidential Library and Museum have to offer please call 979-691-4000 for all Museum inquiries or 979-862-2251 for all Foundation or Membership inquiries.

GRAD Aggies

<http://grad-aggies.tamu.edu>

Graduate Resources and Development for Aggies (G.R.A.D. Aggies) is a collaborative effort of eight university-level academic support units providing workshops, seminars, training events, and online resources open to all graduate and professional students. Facilitated by the Office of Graduate and Professional Studies, G.R.A.D. Aggies programming falls under four broad competency areas: academic development, leadership and communication development, instruction and assessment, and career development. These workshops are designed to provide those

“soft skills” not addressed directly in discipline-based coursework that employers cite as essential to applicants’ competitiveness.

The G.R.A.D. Aggies certificate program, launched in the Fall of 2015, offers students the opportunity to spotlight their participation in professional development events and enhance their CV or resume. This program promotes deeper engagement for students who attend G.R.A.D. Aggies Events. The certificate is offered at three levels: Basic, Intermediate and Advanced, all at no cost to the student. All G.R.A.D. Aggies events are listed on the G.R.A.D. Aggies Calendar and earn Professional Development Units (PDUs) that accumulate to reach the desired certificate level. Achieving certificate requirements for the Basic level requires earning a minimum of 6 PDU credits, completing the corresponding short assignment for each event within one month of attendance, and submitting a final program reflection. Intermediate and Advanced Certificates require an increased number of PDUs for completion, as well as other activities. Student engagement in the G.R.A.D. Aggies certificate program is tracked through eCampus.

A weekly G.R.A.D. Aggies eNewsletter is sent to all graduate and professional students to alert them to ongoing professional development activities associated with G.R.A.D. Aggies as well as other professional development opportunities and resources. OGAPS also facilitates the G.R.A.D. Aggies calendar (see <https://calendar.tamu.edu/gradaggies/#!view/all>) and a Professional Development Portal that are online repositories of professional development opportunities available at Texas A&M at the department, college, or university level and enable quick searching of opportunities across campus (see <http://ogaps.tamu.edu/profdev-portal>). Students can also subscribe to the G.R.A.D. Aggies calendar to have events auto populate to their smart phone or device.

Graduate and Professional Student Council

<http://gpssc.tamu.edu>

The **Graduate and Professional Student Council (GPSC)** serves as the graduate and professional student government of Texas A&M University. GPSC works in cooperation with the Texas A&M University administration, faculty, and student leaders to advocate for graduate and professional students and to ensure their needs are understood and considered when making campus policies concerning academic excellence, tuition and fees, and research are made.

Specific goals of the GPSC include:

- to serve as the voice of and represent all graduate and professional students of Texas A&M.
- to identify, share, and discuss issues pertinent to graduate and professional students in order to maintain academic freedom; improve the quality of instruction; develop and strengthen recruitment and retention programs; encourage training, fair compensation, and benefits; and ensure that quality student services are made available.
- to be recognized as representing a unique population of Texas A&M University.
- to establish and maintain open and effective communication with the University and its constituents.
- to establish and maintain open and effective communication among the graduate and professional student body on issues that affect its members.

- to serve as an outreach venue for graduate and professional students by providing opportunities for social interaction and service to the local community.

Each academic department with graduate and professional programs is eligible to send one voting delegate to the biweekly meetings and all graduate and professional students are invited to attend. Officer elections are held in the spring. GPSC also works closely with the Student Government Association to ensure graduate and professional student issues are represented and addressed through student legislation and on University committees. Additional information is available on the GPSC website at <http://gpsc.tamu.edu>.

Health Promotion

<http://studentlife.tamu.edu/hp>

- Provides educational health information and consultation
 - Alcohol and Other Drugs, Nutrition, Interpersonal Violence Prevention, Reproductive Health, Sexual Health, Stress Management, etc.
- Presentations available upon request
- Offers GreenDot Bystander Intervention Training
- Offers Stand UP Training on trauma informed care
- Offers the Stand UP Workshop
- Peer health educator training and outreach
- Resource tables and interactive programming available for student events

To request a presentation on any of these topics, visit our website at <https://studentlife.tamu.edu> or email Health Promotion and healthpromotion@tamu.edu.

For presentations on Green Dot Bystander Intervention Program visit <http://greendot.tamu.edu>.

For presentations on Stand UP visit <https://studentlife.tamu.edu/standup/>.

For more information on Texas A&M's Step In Stand UP Campaign visit <http://stepinstandup.tamu.edu>.

International Student Services

<http://iss.tamu.edu/>

International Student Services provides the following support services to international students (defined as students who are not U.S. citizens or lawful permanent residents):

- Pre-arrival information
- Certificates of Eligibility (Forms I-20 and DS-2019)
- On-line Orientation and International Student Conference
- Represent the University with the Department of Homeland Security, Department of State and the Student Exchange Visitor Information System (SEVIS)
- Assist students with federal immigration regulation compliance
- Advising
- Liaison for students, university and community
- International student employment information
- Administration of some international student scholarships and loans

- Coordinate with the Texas A&M University System Student Health Insurance Plan provider and students
- Community involvement activities
- Acts as a liaison between the University, sponsors and sponsored students

Memorial Student Center (MSC)

<http://msc.tamu.edu/>

- Programming at the MSC, Texas A&M's student union, enriches the living and learning experience in Aggieland. We produce hundreds of programs each year in the arts, cultural and educational awareness and exploration, leadership development, and service projects on campus and in the community. Our programs include the OPAS performing arts series, art exhibitions in the MSC Reynolds Gallery, concerts, weekly films, lectures and speakers discussing current events and national affairs, the MLK Breakfast, Salsa Dance Night, and MSC Open House. The MSC also promotes international awareness through on-campus programs and internships abroad.
- MSC programs also offer students excellent academic development opportunities. The MSC Jordan Institute for International Awareness offers students the chance to conduct international research and serve as interns for international corporations. The Student Conference on National Affairs offers students a challenging and informative conference focused on professional development in the area of national policy, and the Student Conference on Latino Affairs features sessions that tie together personal and professional development. In addition, MSC programming committee members learn and practice leadership and professional skills through the experience of managing their own organizations and producing programs for the campus community.
- The MSC Box Office provides students and organizations with convenient and affordable ticketing, cash handling, and sales services. The Box Office makes selling easier by eliminating the worry and risk of cash handling by providing online sales and by providing extensive reporting capabilities that take the hassle out of accounting tracking sales and cash flow.

Department of Multicultural Services

<http://dms.tamu.edu/>

The Department of Multicultural Services (DMS) contributes to steady progress toward institutional diversity goals of greater inclusion and academic excellence by positively impacting the campus climate.

The department has a mission to provide multiple educational and developmental services for underrepresented and historically marginalized racial and ethnic populations and diversity education programs that foster inclusive learning environments for all students. DMS supports, advocates for and challenges students as they transition and persist at Texas A&M, as well as provides opportunities for students to examine and communicate ways to contribute to an inclusive and respectful campus community, develop cultural knowledge and competence and build cross-cultural communication skills.

DMS is home to a number of student organizations and programs that provide academic, social, cultural, and personal development, as well as intentional interaction and engagement. DMS assists students with their transition to and persistence through Texas A&M University and educates students about individual differences, cultural competence, and how to

contribute to a respectful campus. The department strives to maintain a welcoming and inclusive environment for all students.

Office of Graduate and Professional Studies Workshop Series

<http://ogaps.tamu.edu/>

The Office of Graduate and Professional Studies provides workshops each fall and spring semester to provide graduate and professional students support as they progress through their programs to graduation. The workshops are available to all graduate and professional students, Masters and Doctoral, and address services offered by the Office of Graduate and Professional Studies (e.g., thesis and dissertation services); they also cover a variety of professional development topics, such as Financial Management, Intellectual Property (data ownership), Building a Mentoring Partnership, and Multiple Career Paths, as a part of the G.R.A.D. Aggies program. Workshops are added as students request new information and can be provided to individual student organizations upon request. OGAPS also facilitates the G.R.A.D. Aggies Calendar (<https://calendar.tamu.edu/gradaggies/#!view/all>) and a Professional Development Portal (<http://ogaps.tamu.edu/Graduate-Student-Professional-Development-Portal>) that are online repositories of professional development opportunities available at Texas A&M at the department, college, or university level to enable quick searching of opportunities.

Recreational Sports

<http://recsports.tamu.edu>

- All currently enrolled Texas A&M students (with some exceptions) are automatically Rec Members. All you need is your student ID to utilize the Student Recreation Center and other Rec Sports facilities. Guest passes for visitors are available for purchase. Persons with disabilities are invited to contact Member Services to inquire about accommodations.
- Drop-in recreation encompasses the use of recreational facilities such as a walking/jogging track, handball/racquetball courts, and indoor courts for soccer, basketball, volleyball, and badminton. The Rec Center also features a bouldering wall, an indoor rock climbing facility, outdoor basketball and sand volleyball courts, extensive strength and conditioning areas, dance/activity rooms, and a world-class natatorium featuring indoor and outdoor pools and a diving well. Facilities may be used on a drop-in basis except when reserved for classes or university functions.
- Rec Sports also offers aquatics classes, group exercise and specialty classes, boot camps, personal and small group training, intramural sports, the Texas A&M Sport Clubs program, Outdoor Adventures, and the Walk of Champions brick campaign.

Department of Residence Life

<http://reslife.tamu.edu/>

- Responsible for the operation of on-campus residence halls and University Apartments (White Creek and Gardens Apartments). Summer occupancy of on-campus residence halls is open to undergraduate and graduate students.
- University Apartment units (<http://reslife.tamu.edu/apartments>) are available for graduate students, single-parent families, veterans, international students, married students or single undergraduate

students without children who are sophomores, juniors, seniors or non-traditional freshmen (The Gardens).

Student Activities

<http://studentactivities.tamu.edu/>

- Student Activities is the premier hub for leadership and involvement opportunities on campus. At Texas A&M, we care about helping Aggies develop skills both in and out of the classroom that will prepare them for life beyond Aggieland. Whatever it is that you love, Student Activities is here to help you practice your passion through involvement in one of our 1100+ student organizations. The perks of getting involved range from reaching your leadership potential to networking with administrators and potential employers to forming lasting friendships.
- At Texas A&M, Aggies are held to a high standard of leadership and selfless service. To promote and develop these qualities, our Leadership and Service Center offers a number of leadership programs to help you reach your leadership potential, and it also houses several service-based organizations and events such as The Big Event and the Volunteer Opportunities Fair. We also provide a way for Aggies to connect and volunteer with local community agencies through our AggieServe database (<http://aggieserve.tamu.edu>).

Student Assistance Services

<http://sas.tamu.edu>

- Referrals/Resource Connections such as:
 - Personal
 - Academic
 - Community
- Student absence notification
- Sexual violence response
- Assistance in coordinating family needs in the event of an emergency
- Transition issues
- General consultation:
 - University rules
 - Process
 - Faculty concerns

Student Conduct Office

<http://studentlife.tamu.edu/sco>

- Receive and process reports of alleged student rule violations
- Presentations available upon request

Student Counseling Service

<http://scs.tamu.edu>

In support of the mission of TAMU and the Division of Student Affairs, the **Student Counseling Service** contributes to student learning and development. We provide exceptional services and programming focused on student mental health. The Student Counseling Service exists to advance student development and academic success by providing personalized and evidenced-based mental health care to Aggies. We, at the Student Counseling Service, are committed to respecting and celebrating the diverse students at Texas A&M University. We commit to enriching student development and growth through compassion,

empowerment, advocacy and empathy. Below is a brief list of our services -Please go to our website for further information.

- **Confidential Services**
- **Prevention and Education**
 - Suicide Prevention Training
 - Educational outreach/programming
 - Pacifica –free App for all TAMU students
- **Short-term Counseling**
 - Assessment is the first step
 - Workshops & Group counseling
 - Individual & Couples counseling
 - AOD Assessment
 - ADHD/Learning Disability Screening
 - Psychiatric services in conjunction with counseling
 - Assistance with Community Referrals
- **Crisis Intervention**
 - Crisis intervention available anytime during business hours 8:00 AM to 5:00 PM Monday through Friday
 - HelpLine is open after-hours, 4:00 PM-8:00 AM during the week and 24 hours on the weekends. It is a confidential telephone hotline staffed by Aggies to provide: Information; Support; Crisis Intervention; Referral

Student Health Services

<http://shs.tamu.edu>

Patient Services/General Questions: (979) 458-8310

Clinics:

- Medical Clinics
- Women's Clinic
- Specialty Clinics

Ancillary:

- Dietitian
- Medical Laboratory
- Pharmacy
- Physical Therapy
- Preventive Medicine
- Radiology Services

Additional Services:

- Ambulance Service/EMS
- Dial-A-Nurse
- Health Insurance (<http://tamu.myahpcare.com>) Information
- Integrated Behavioral Health
- Referral Coordination
- Appointments – Monday - Friday, 8 a.m. - 5 p.m.

Student Legal Services

<http://studentlife.tamu.edu/sls>

- Notary Public
- Legal advice and counseling for Texas A&M students

Student Life

<http://studentlife.tamu.edu/>

- The Offices of the Dean of Student Life strive to enhance your opportunities as a student to participate fully in the University experience. We do this by providing students with information, services, programs and involvement opportunities that facilitate responsible life choices and promote awareness of themselves and their community. Each of the program areas within the Offices of the Dean of Student Life has a specific mission, but one common goal: to provide education, outreach, and support to you.
- Specific services and programs offered include:
 - Gay, Lesbian, Bisexual, and Transgender Resource Center
 - Health Promotion (Alcohol and other Drugs, Violence Prevention, and Wellness)
 - New Student and Family Programs
 - Student Assistance Services
 - Student Conduct Office
 - Student Legal Services
 - Student Media (*The Battalion* and *Aggieland* yearbook)
 - Women's Resource Center

Student Media

<http://studentlife.tamu.edu/studentmedia>

- Student Media produces national, award-winning publications; The Battalion newspaper, the Aggieland yearbook and the Maroon Life magazine. All three are written, edited and produced by students and offer excellent opportunities to gain valuable experience for journalistic and related careers.
- The Battalion is published Monday, Wednesday and Friday during the fall, on Monday, Wednesday and Thursday in the spring and every other week during the summer sessions. It is distributed to students, faculty and staff on campus and at many apartments and other high traffic areas in College Station. The Battalion also is available online and on mobile devices at thebatt.com.
- The Aggieland is distributed in the fall but is a year-round project documenting school activities. It is one of the nation's largest college yearbooks.
- Maroon Life is published five times during the school year with New Students' Guide to Aggieland (distributed at New Student Conferences), Fall Sports Preview, Best of Aggieland (winter distribution), Spring Sports Preview and Housing Guide (Family Weekend) editions.

Technology Resources

<http://IT.tamu.edu>

- Internet Access
- TAMULink Wireless Internet (<http://tamulink.tamu.edu>)
- Texas A&M Gmail (<http://google.tamu.edu>)
- 24-Hour Technical Support (Help Desk Central (<http://hdc.tamu.edu>))
- Campus Computer Labs (Open Access Labs (<http://oal.tamu.edu>))
- Discounted Software (<http://software.tamu.edu>)

- High Performance Research Computing (<https://hprc.tamu.edu/>)
- Learning Management System - eCampus (<http://ecampus.tamu.edu>)

Transportation Services

Transit - The University operates an on- and off-campus transit system that can be used by anyone on campus, fare-free. The off-campus transit system serves most of the major apartment complexes and housing areas in College Station, as well as the Blinn College Campus and RELLIS Campus.

All transit services are included in student registration fees and do not require a bus pass, however, passengers are required to present their Texas A&M, Blinn, or Brazos Transit District (BTD) ID when boarding at off-campus stops. Members of the general public possessing a Brazos Transit District ID may ride both on- and off-campus bus routes. In addition, students may ride The District (<http://btd.org>) buses fare-free by showing their IDs upon entering the bus. For BTD bus route information, visit <http://btd.org>.

For updates about transit routes, subscribe to the RSS feed at <http://transport.tamu.edu/parking/faqpermit.aspx> or follow @aggiespiritbus (<http://twitter.com/aggiespiritbus>) on Twitter. For transit information, including maps and leave times, visit <http://m.tamu.edu>.

Parking - Those who choose to bring a vehicle to campus are required to purchase a permit or pay-by-the-hour to park (Download the Parkmobile app, available on the AppStore, Google Play, or Windows Store, or those without a smartphone may use the mobile web app at <http://us.parkmobile.com/mobile>) in designated visitor areas (see also Optional Campus Services (p. 1495)).

Parking is at a premium on Texas A&M's campus; MOST customers are not assigned their first choice for parking. Often the available parking may not be immediately adjacent to your building or facility. Students may register for a permit at <http://transport.tamu.edu/parking/faqpermit.aspx> or sign up for the wait lists at <http://transport.tamu.edu/account>. To get the best parking available, register online by the July 10 priority deadline.

For updates about parking, traffic, and construction, subscribe to the the RSS feeds at <http://transport.tamu.edu/about/rss.aspx> or follow @aggieparking (<http://twitter.com/aggieparking>) on Twitter or @TAMUTransportation on Facebook and Instagram.

For more information about parking permits or to view the *Parking Rules and Regulations*, visit <http://transport.tamu.edu/parkingreg>.

Bicycles - Bicycles are a great way to get to, from, and around campus. Bike services include the bike share program, bike lease program, borrow-a-bike, bike registration, summer bike storage, and maintenance stations.

For more information visit <http://transport.tamu.edu/bicycles>.

Alternatives - Don't have a car? There are plenty of alternatives, including carshare, rideshare, and break/weekend shuttles to major Texas cities. For more Alternative Transportation options, visit <http://transport.tamu.edu/alternative>.

University Center and Special Events (UCEN)

<http://ucenter.tamu.edu/>

- University Center and Special Events features a variety of special event and meeting spaces, as well as theatrical production spaces. Our venues are ideal for student, academic, administrative, corporate, social, non-profit and arts-related events. Our spaces include: the Memorial Student Center, Rudder Theatre Complex, J. Earl Rudder Tower, Koldus Building, All Faiths Chapel, designated outdoor spaces and the University Center Guest Suites. We also provide services in any approved facility of your choosing.
- When it comes to planning events on campus, visit the University Center and Special Events office on the 2nd floor of Rudder Tower. Our staff can assist you with reservations in any of the UCEN facilities as well as help in all aspects of planning meetings, socials or conferences. The highly skilled staff arranges event set ups; provides and operates audio/visual equipment, electricity, lighting and event staging; and assists with many of the other support details that are essential to a successful event.

University Libraries

<http://library.tamu.edu>

- Sterling C. Evans Library & Annex (<http://evans.library.tamu.edu>)
- West Campus Library (<http://wcl.library.tamu.edu>) (WCL)
- Medical Sciences Library (<http://msl.library.tamu.edu>) (MSL)
- Policy Sciences and Economics Library (<http://psel.library.tamu.edu>) (PSEL)
- Cushing Memorial Library & Archives (<http://cushing.library.tamu.edu>)

Veteran Resource and Support Center

<http://aggieveterans.tamu.edu>

- Aggie Veteran Network – Connects military-affiliated students (veterans, active duty, reserve/National Guard and dependents) with hundreds of resources and contacts. <http://aggieveterannetwork.tamu.edu/>
- Academic and Student Life Support – Connects students with academic assistance and student life resources to meet individual requirements.
- Military Admissions Liaison – Located in the VRSC to assist student veterans with the admission process, military withdrawals and readmission paperwork.
- Vetsuccess on Campus (VSOC) – Connect with our campus VA Counselor for VA related inquiries, vocational rehabilitation support and programs. <http://aggieveterans.tamu.edu/vetsuccess-on-campus/>
- Peer Advising for Veteran Education (PAVE) – Connects new student veterans with current student veterans to facilitate the transition to Texas A&M University.
- Student Veteran Association – The organization for student veterans. Opportunity to meet other vets and be part of the Aggie veteran community.

Veteran Services Office (Scholarships & Financial Aid)

<http://veterans.tamu.edu>

- Assists eligible students and their dependents in securing federal and state veterans education benefits and other funding including scholarships and financial aid.

Vice President for Student Affairs

<http://studentaffairs.tamu.edu/>

In support of the Texas A&M University mission, the Division of Student Affairs contributes to student learning and development. We provide exceptional services, facilities, and programs that promote student success, embody the Aggie spirit, and foster a diverse and inclusive campus community to deepen the understanding and individual application of the Aggie Core Values – Loyalty, Integrity, Excellence, Leadership, Selfless Service and Respect.

Women's Resource Center

<http://studentlife.tamu.edu/wrc>

- Programs include:
 - **Elect Her: Aggie Women Win:** A one day conference which encourages and trains women to run for student government and future political office.
 - **First Thursday:** Held on the first Thursday of the month during the fall and spring semesters, First Thursday connects students with professionals through informational panels which cover a variety of topics relevant to students.
 - **International Women's Day Conference:** The aim of this evening conference is to bring awareness to the struggle women face internationally as well as to celebrate and empower women from all cultural backgrounds. The Conference is held during Women's History Month in March.
 - **Salary Negotiation Workshops:** These workshops teach college students preparing to enter the job market about the gender pay gap, including its personal consequences; how to quantify the market value of their education, skills, and experience; how to conduct objective market research and determine a fair target salary; and how to create a strategic pitch and respond to salary offers.
 - **Women's History Month Calendar:** A printed calendar highlighting campus events related to Women's History Month in March.
 - **Women's Progress Award:** Awards for students, staff, faculty, and administrators who encourage and promote sensitivity to and awareness of issues that relate to women. Presented during the Accountability, Climate and Equity Awards during the spring semester.
- Online Resources for Pregnant and Parenting Students
 - **Student Rights and Campus Resources:** A list of frequently asked questions regarding the rights of pregnant and parenting students and some of the on-campus resources available to students.
 - **Breastfeeding Welcomed Here:** A list of private, accessible spaces for nursing mothers to express their milk on campus. Locations can be found on the WRC website or the Aggie Map.
 - **The Little Aggie:** A resource guide for Aggie parents with information about local activities for children, information about local medical providers, and suggested questions for childcare providers.
 - **Off-Campus Resources:** A list of local, state, and national resources available to pregnant and parenting students covering a variety of issues from maternal health, to breastfeeding, to childcare.
- Presentation topics include, but are not limited to:
 - Women's Leadership
 - Gender Equity
 - Body Image
 - Salary Negotiation
- Internships:
 - Elect Her Student Liaison
 - Pregnant and Parenting Initiatives Coordinator
 - Internships designed to benefit the student and the Women's Resource Center
- Onsite lactation suite for mothers to express their milk
- Student organization advisor: The American Association of University Women at Texas A&M University (AAUW-TAMU)
- Offers resources and referrals to survivors of sexual violence, dating and domestic violence, and stalking
- Offers resources and referrals to pregnant and parenting students

COLLEGES, SCHOOLS AND INTERDISCIPLINARY DEGREE PROGRAMS

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- Mays Business School (p. 477)
- College of Dentistry (p. 525)
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- College of Liberal Arts (p. 1023)
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- College of Nursing (p. 1180)
- Irma Lerma Rangel College of Pharmacy (p. 1194)
- School of Public Health (p. 1196)
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- College of Veterinary Medicine and Biomedical Sciences (p. 1322)
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Interdisciplinary Degree Programs Masters

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- Master of Science in Genetics (p. 80)
- Master of Science in Marine Biology (p. 90)
- Master of Science in Molecular and Environmental Plant Sciences (p. 101)
- Master of Science in Neuroscience (p. 111)
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- Master of Water Management and Hydrological Science in Water Management and Hydrological Science (p. 135)

Doctoral

- Doctor of Philosophy in Agribusiness and Managerial Economics (p. 60)
- Doctor of Philosophy in Ecology and Evolutionary Biology (p. 69)
- Doctor of Philosophy in Genetics (p. 84)
- Doctor of Philosophy in Marine Biology (p. 95)
- Doctor of Philosophy in Molecular and Environmental Plant Sciences (p. 105)
- Doctor of Philosophy in Neuroscience (p. 115)
- Doctor of Philosophy in Toxicology (p. 126)

- Doctor of Philosophy in Water Management and Hydrological Science (p. 138)

Certificates

- Digital Humanities Certificate (p. 144)
- Energy Certificate (p. 145)
- Geographic Information Science Certificate (p. 146)
- Health Systems and Design Certificate (p. 146)
- International Petroleum Management Certificate (p. 147)
- Prevention Science Certificate (p. 147)
- Remote Sensing Certificate (p. 148)
- Space Life Sciences Certificate (p. 148)
- Transportation Planning Certificate (p. 148)

Master of Agribusiness in Agribusiness

Chair: V. Salin

Graduate Advisor: V. Salin

This professional curriculum is designed to provide specialized preparation for economic, financial, marketing, and managerial analysis of agribusiness, food and fiber industry decisions. The **Master of Agribusiness (MAB)** degree program is non-thesis, interdisciplinary, and jointly administered by the College of Agriculture and Life Sciences and the Mays Business School. Program administration includes a Program Director, Program Executive Committee and an Intercollegiate Faculty. This program is one of a select cadre of national programs that successfully cuts across the business and agriculture disciplines to focus on food and agribusiness management.

The requirements of the Master of Agribusiness degree are completed with a full-time, residential program of study. Course selections are flexible to meet the needs and goals of students who have prior education and experience in life sciences fields or in business and economics. Enrollees who have taken business courses as undergraduates will be able to build on what they learned in these foundation courses and specialize their training to pursue specific career goals. Those who have not completed these foundation courses may complete them as part of their degree program. A student will work closely with the Program Director in developing a degree plan to meet his/her unique background and career goals.

The Intercollegiate Faculty of Agribusiness provides administrative leadership for the Master of Agribusiness (MAB) degree program. The mission of the Intercollegiate Faculty of Agribusiness is to:

1. foster the synergistic development of interdisciplinary agribusiness research and teaching;
2. enhance communication between the faculty members in the College of Agriculture and Life Sciences (Department of Agricultural Economics) and the Mays Business School (Departments of Accounting, Finance, Information and Operations Management, Management and Marketing);
3. build a strong academic foundation in agribusiness and managerial economics that will meet the current and future needs of industry, governments, and higher education in the U.S. and globally; and

4. capitalize on the network of leaders within the food and agribusiness industry for student recruitment, research opportunities, internships and placement.

Furthering the development of value-added agricultural and food enterprises in Texas, the U.S., and worldwide will require considerable analytical and managerial expertise. Graduate-trained managers are needed who are comfortable working in technical fields of expertise and who also have an understanding of the unique challenges and issues facing the agricultural and food sector. The Master of Agribusiness program provides this training.

Information regarding the program and application process (<http://admissions.tamu.edu/graduate/apply>) may be obtained from the MAB Website (<http://aglifesciences.tamu.edu/agecograds/degree-programs/agribusiness>) or by contacting the Intercollegiate Faculty Chair (mab@agecon.tamu.edu).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 59)
- Degree Plan (p. 59)
- Credit Requirement (p. 59)
- Transfer of Credit (p. 59)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 59)
- Final Examination (p. 60)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the Chair of the Intercollegiate Faculty of Agribusiness concerning program structure and requirements. The Chair of the Intercollegiate Faculty of Agribusiness has the responsibility of approving the proposed degree plan for a MAB student and is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies. No other advisory committee members are required.

Degree Plan

The degree plan must be completed and filed with the Office of Graduate and Professional Studies by the student's second semester, and no later than dates announced in the OGAPS calendar of deadlines for graduation.

This proposed degree plan should be submitted using the online Document Processing Submission System located on the website <https://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary to correct deficiencies in the student's academic preparation.

No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

The minimum requirements for this degree are the completion of 39 credit hours of coursework. To emphasize the integration and application

of subject matter learned and the development of written and oral communication skills, a student will be required to take capstone courses consisting of AGECE 629 and AGECE 630 during the last fall semester. This 6 credit hour course requirement replaces the Final Examination.

A student may select 6 credit hours of electives within the 39 credit hour requirement in consultation with his/her advisor. These elective hours may include AGECE 684. At least one elective course is to be from the Mays Business School, preferably in the international area.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 4 hours of 684 (Professional Internship) and/or
 - 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student with permission from the Intercollegiate Chair and Associate Department Head for Graduate Programs and approved by the Office of Graduate and Professional Studies.

Final Examination

To emphasize the integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take capstone courses consisting of AGECE 629 and AGECE 630 during the last fall semester. This 6 credit hour course requirement allows waiving of the Final Examination. Completion of these capstone courses serves as the final examination for this program.

Additional Requirements

Additional Requirements

- Residence (p. 60)
- Time Limit (p. 60)
- Foreign Languages (p. 60)
- Application for Degree (p. 60)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Agribusiness, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agribusiness degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Agribusiness and Managerial Economics

Students completing a Ph.D. degree in Agribusiness and Managerial Economics will be uniquely qualified to teach agribusiness and conduct research in academic, government and consulting careers. This program provides a solid foundation of economic theory and application with field areas in the different business disciplines of finance, strategic management, marketing and supply chain management in the Mays Business School.

Training these graduates requires strong interdepartmental and interdisciplinary teaching and research programs emphasizing the application of managerial economics. The Ph.D. in Agribusiness and Managerial Economics is designed to address these needs through the integrated curricula across Agricultural Economics, Economics and the Mays Business School.

Information regarding the program and application process (<http://admissions.tamu.edu/graduate/apply>) may be obtained from the AGECE graduate website (<http://aglifesciences.tamu.edu/agecegrads>) (click on "Prospective Student") or by contacting the Department (AE-Gradoffice@agecon.tamu.edu).

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of

his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 62)
- Degree Plan (p. 62)
- Transfer of Credit (p. 62)
- Research Proposal (p. 63)
- Examinations (p. 63)
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Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu/>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's

advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 65)
- Time Limit (p. 65)

- Continuous Registration (p. 65)
- Admission to Candidacy (p. 66)
- Languages (p. 66)
- 99-Hour Cap on Doctoral Degree (p. 66)
- Application for Degree (p. 66)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Biotechnology in Biotechnology

<http://ppib.tamu.edu>

Chair: V. M. Ugaz

The **Master of Biotechnology (MBIOT)** is designed for a student who wants professional graduate training with an industry orientation in the life sciences. It is intended to emphasize the use of problem solving and technical skills in the life sciences. The Master of Biotechnology degree program is non-thesis, interdisciplinary and jointly administered by six colleges (Agriculture and Life Sciences, Engineering, Liberal Arts, Mays Business School, Science, Veterinary Medicine). Program administration includes a Program Chair and Faculty of Biotechnology. This program is one of a select few nationally that is designed to cut across the business and life science disciplines to better prepare a student for the variety of career pathways associated with the life science industries. It is a degree combining business and science and requires the completion of a minimum of 39 hours of coursework and a satisfactory comprehensive final exam.

An individual with a baccalaureate degree in a life science field from a college or university of recognized standing, or a qualified senior in his/her last semester, may apply for admission to the program. As a result of the combination of professional and technical classes, prerequisites may be required before a student can take the core curriculum courses. The Program Chair will specify prerequisite work when necessary.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 67)

Degree Plan (p. 67)

Credit Requirements (p. 67)

Transfer of Credit (p. 67)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 67)

Final Examination (p. 68)

Student's Advisory Committee

After receiving admission to graduate studies and **before** enrolling for coursework, the student will consult with the Professional Program in the Biotechnology Office. The student's advisory committee for the master's degree will consist of **no fewer than three members** (more than one department must be represented by the members of the advisory committee). The committee chair or co-chair of the advisory committee must be a member of the Intercollegiate Faculty of Biotechnology and at least one or more of the members must have graduate faculty membership through another academic program.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. The chair of the committee has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship and is registered for 684 courses, the student may request, in writing, that the Program Chair appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional portfolio and the final oral defense. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan should be completed and filed with the Office of Graduate and Professional Studies upon conclusion of the first semester of coursework, but no later than 90 days prior to graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to

correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 39 hours of coursework is required for the Master of Biotechnology degree. To emphasize the integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take BIOT 684 during his/her last semester. A student may select 6 credit hours of electives within the 39 credit hour requirement in consultation with his/her advisory committee. These elective hours may be from any course on the list of approved electives or other courses if approved by the advisory committee.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or **in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas

A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for credit.
- 2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
- 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
- 4. A maximum of 8 hours of 684 (Professional Internship), and 8 hours of 685 (Directed Studies).
- 5. A maximum of 2 hours of Seminar (681).
- 6. A maximum of 6 hours of advanced undergraduate courses (300- or 400-level).
- 7. For graduate courses of three weeks duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
- 8. No credit hours of 690 (Theory of Research), 691 (Research) or 695 (Frontiers in Research) may be used.
- 9. Undergraduate courses may not be used to satisfy the required business courses.
- 10. Continuing education courses may not be used for graduate credit.
- 11. Extension courses are not acceptable for credit.
- 12. . For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
- 13. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A student must return to campus after the professional internship and pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. Please see the Office of Graduate and Professional Studies website (<http://ogaps.tamu.edu>) for the forms. It also should include the signatures of approval of the

committee chair and the chair of the intercollegiate faculty certifying the student's eligibility for the exam. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The BIOT 684 (<http://catalog.tamu.edu/search/?P=BIOT%20684>), Professional Portfolio and oral defense of the contents of that portfolio will constitute the final examination. Each student will prepare a professional portfolio on topics relating to the student's course of study and the internship. The professional portfolio must be submitted to the student's advisory committee for approval prior to the examination. The student's advisory committee will conduct the examination, which will include an oral presentation prepared by the student. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. All committee members should attend the final examination. If one of the members cannot attend the examination, he or she must find an appropriate substitute. The committee chair may not be substituted.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A Master of Biotechnology student does not qualify to petition for an exemption from the final exam.

Additional Requirements

Additional Requirements

- Residence (p. 68)
- Time Limit (p. 69)
- Scholastic Requirements (p. 69)
- Foreign Languages (p. 69)
- Internship or Practicum (p. 69)
- Application for Degree (p. 69)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Biotechnology, the student must complete 9 credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such

a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to a master's degree. Time limits for coursework on the degree plan also apply to transfer courses.

Scholastic Requirements

To maintain good academic standing, a MBIOT student must maintain a minimum cumulative 3.000 GPR each semester. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to 3.000 or above by the end of the next 9 hours of coursework. If this requirement is not met, the Program Chair will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MBIOT program, he or she shall not be permitted to enroll in other MBIOT courses.

Foreign Languages

No specific language requirement exists for the Master of Biotechnology degree.

Internship or Practicum

A student who undertakes a professional internship of no less than 375 hours in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed. A student on academic probation will not be allowed to participate in an internship.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Ecology and Evolutionary Biology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of

coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 70)
- Degree Plan (p. 71)
- Transfer of Credit (p. 71)
- Research Proposal (p. 71)
- Examinations (p. 71)
 - Preliminary Examination (p. 71)
 - Preliminary Examination Format (p. 72)
 - Preliminary Examination Scheduling (p. 72)
 - Report of Preliminary Examination (p. 72)
 - Retake of Failed Preliminary Examination (p. 72)
 - Final Examination (p. 73)
 - Report of Final Examination (p. 73)
- Dissertation (p. 73)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty.

The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 74)
- Time Limit (p. 74)

- Continuous Registration (p. 74)
- Admission to Candidacy (p. 74)
- Languages (p. 74)
- 99-Hour Cap on Doctoral Degree (p. 74)
- Application for Degree (p. 75)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Energy

Through a 10-month long program, featuring thesis and non-thesis tracks, the **Master of Science in Energy** aims to expose students and professionals to (a) important energy challenges and opportunities, and (b) advances in theory, methods, technologies, and applications delivered by energy leaders from academia, industry, and government, through a module-based structure and a distinguished seminar series.

Emphasis is placed on creating the new generation of energy educated students and professionals who are broadly educated on all components of energy through quantitative analytical methods and multi-scale systems based approaches.

The **Master of Science in Energy** is designed to introduce students and professionals to the multiple interdisciplinary facets of energy ranging from an overview of energy technologies (fossil-based, renewable, and non-fossil based) to multi-scale energy systems engineering methods, to energy economics, law, security, policy, and societal impact. The structure of the degree is based on (a) non-overlapping modules, (b) distinguished seminar series, and (c) research thesis (thesis track only). The degree can be completed face-to-face in College Station, Texas or fully online via distance learning without any residency requirement.

Each module is 1.5 weeks long and has 5 teaching days, including a total of 22 hours of lecture/lab material (22 contact hours) with 4.4 hours of lectures per teaching day. Therefore, two weekly modules are equivalent to a semester-long course and correspond to 3.0 credits. Seminars are delivered by distinguished energy experts from academia, industry, and government. Research thesis topics are provided and supervised by faculty members affiliated with the Texas A&M Energy Institute.

The **Master of Science in Energy** degree is offered in two tracks. The thesis track requires a research thesis, and the non-thesis track requires only course work (i.e., without research thesis). The duration of both track is about 10 months (i.e., September 1 – June 30).

The thesis track requires 16 modules, thesis, and seminars and results in 32 student credit hours. This track includes a research thesis and requires students to be face-to-face in College Station, Texas. Students will work in conjunction with faculty members affiliated with the Texas A&M Energy Institute.

The non-thesis track requires 23 modules and seminars, and results in 36.5 student credit hours. This track is offered to students or professionals face-to-face in College Station, Texas or online via distance learning.

The aims of the Master of Science in Energy degree program are:

- Educate students/professionals with the broad spectrum of important energy issues, energy technologies based on fossil and non-fossil resources, sustainable energy technologies, and their interactions with energy economics, entrepreneurship, law, and policy.
- Enhance the quantitative skills and knowledge of students/professionals for the analysis, simulation, and optimization of energy systems, and prepare them for practical applications.
- Develop and enhance students' skills for independent research in energy.
- Educate and train the new generation of "energy experts" to leading and impactful careers in the multi-faceted energy industry, the energy business domain, the law sector, the public policy sector, and the government.
- Integrate and synergize educational efforts in energy from all parts of Texas A&M University that include (a) the College of Agriculture and Life Sciences; (b) the College of Engineering, (c) the College of Geosciences; (d) the College of Sciences; (e) the Bush School of Government and Public Policy; (f) the Mays Business School; (g) the College of Liberal Arts; and (h) the School of Law.

Program Website

<http://energy.tamu.edu/education>

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 76)
- Degree Plan (p. 77)
- Credit Requirements (p. 77)
- Transfer of Credit (p. 77)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 77)
- Thesis Option (p. 78)
 - Thesis Proposal (p. 78)
 - Final Examination/Thesis Defense (p. 78)
- Non-Thesis Option (p. 79)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Science in Energy degree is offered in two tracks. The thesis track requires a research thesis, and the non-thesis track requires only course work (i.e., without research thesis). The degree can be completed face-to-face in College Station, Texas or fully online via distance learning without any residency requirement.

Students in-residence in College Station, Texas may choose either the non-thesis track or the thesis track. Distance students may only choose the non-thesis track.

For students who want to pursue the non-thesis track, after receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair. The committee chair will be designated by the Master of Science in Energy Interdisciplinary Faculty Chair.

For the thesis track, the student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants

the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science in Energy

degree. The thesis option requires 16 modules, thesis, and seminars. It includes a research thesis and will require students to be in College Station and work in research with faculty members affiliated with the Texas A&M Energy Institute. The fall semester structure of the thesis track will have 8 modules, the distinguished seminar series, and research thesis work. The spring semester structure of the thesis track will consist of 8 modules and research thesis work. The additional 2 months will be devoted towards the completion and defense of the research thesis work. The total number of semester credit hours will be 32 (i.e., 24 for the 16 modules, 2 for the seminars, and 6 for the research thesis work).

A minimum of 36.5 semester credit hours of approved coursework is required for the Non-Thesis Option of the Master of Science in Energy. The non-thesis option requires 23 modules and seminars. This track is offered to students or professionals face-to-face in College Station, Texas or online via distance learning. The Fall semester structure of the non-thesis track will have 10 modules and the distinguished seminars. The spring semester structure of the non-thesis track will consist of 10 modules. Three additional modules will be offered upon completion of the spring semester. The total number of semester credit hours will be 36.5 (i.e., 34.5 for the 23 modules, and 2 for the seminars).

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work

must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U**

for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

Distance Education Degree Program

The Final Examination is not required for the Master of Science in Energy.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a

non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 79)
- Continuous Registration (p. 79)
- Time Limit (p. 79)
- Foreign Languages (p. 80)
- Application for Degree (p. 80)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Genetics

For more information about the Master of Science in Genetics, go to <http://genetics.tamu.edu/>.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 81)
- Degree Plan (p. 81)
- Credit Requirements (p. 81)
- Transfer of Credit (p. 81)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 82)

- Thesis Option (p. 82)
 - Thesis Proposal (p. 82)
 - Final Examination/Thesis Defense (p. 83)
- Non-Thesis Option (p. 83)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research

compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office

of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 83)
- Continuous Registration (p. 84)
- Time Limit (p. 84)
- Foreign Languages (p. 84)
- Application for Degree (p. 84)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along

with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Genetics

The Program in Genetics is the main interdisciplinary PhD program in the Natural Sciences at Texas A&M University and offers research opportunities in a diverse range of Specialties: Bioinformatics and Genomics; Conservation and Population Genetics; Medical Genetics; Microbial Genetics; Molecular, Cellular and Developmental Genetics; and Plant Genetics. The goal of the Program is to provide research opportunities to aspiring research scientists in these various fields for successful careers in academia and industry. The graduate program in genetics is supervised by the faculty of genetics, which is composed of faculty from several departments and colleges whose training, teaching and research is in genetics.

Admission is based on undergraduate record (coursework, laboratory experience, and grades), letters of recommendation, and performance on the GRE and TOEFL exams. Coursework in general genetics, molecular genetics and biochemistry are essential. Graduate assistantships and fellowships are available from the faculty of genetics and from individual departments.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to

do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 85)
- Degree Plan (p. 86)
- Transfer of Credit (p. 86)
- Research Proposal (p. 86)
- Examinations (p. 86)
 - Preliminary Examination (p. 86)
 - Preliminary Examination Format (p. 87)
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 - Final Examination (p. 88)
 - Report of Final Examination (p. 88)
- Dissertation (p. 88)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty.

The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 89)
- Time Limit (p. 89)

- Continuous Registration (p. 89)
- Admission to Candidacy (p. 89)
- Languages (p. 89)
- 99-Hour Cap on Doctoral Degree (p. 89)
- Application for Degree (p. 90)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Marine Biology

The Master of Science degree in Marine Biology is a joint degree program with Texas A&M University, Texas A&M University Galveston Campus and Texas A&M University–Corpus Christi. The program is interdisciplinary, involving courses and linking faculty from the TAMU Colleges of Science (SCI), Agriculture and Life Sciences (COALS), Geosciences (GEOS), TAMU Galveston Campus (TAMUG) and TAMU-Corpus Christi (TAMUCC).

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 91)
- Degree Plan (p. 91)
- Credit Requirements (p. 91)
- Transfer of Credit (p. 91)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 92)
- Thesis Option (p. 92)
 - Thesis Proposal (p. 93)
 - Final Examination/Thesis Defense (p. 93)
- Non-Thesis Option (p. 93)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 93)
- Continuous Registration (p. 94)
- Time Limit (p. 94)
- Foreign Languages (p. 94)
- Application for Degree (p. 94)
- Licensing Program Requirements (p. 94)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one

regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Licensing Program Requirements

Course Requirements for all Texas A&M Maritime Academy Third Mate Licensing Programs

Through the Texas A&M Maritime Academy, TAMUG offers license training for Midshipmen leading to a Third Mates' License (Unlimited Tonnage, Unlimited Oceans). The curriculum for Marine Biology - LO, Marine Sciences - LO and Marine Transportation include this training. All graduate programs offered by TAMUG may include this license training as an option. Each degree candidate will be required to fulfill the existing

university degree requirements plus all U.S. Coast Guard License Option additional requirements to complete STCW Training Record Book:

| Code | Title | Semester Credit Hours |
|--------------------|------------------------------------------------------------------------------|-----------------------|
| Shoreside Courses: | | |
| MART 103 | Basic Safety and Lifeboatman Training | 3 |
| MART 115 | Seamanship I | 3 |
| MART 201 | Vessel Structure and Ship Knowledge | 3 |
| MART 202 | Ship Stability and Trim | 3 |
| MART 204 | Terrestrial Navigation | 3 |
| MART 208 | Maritime Meteorology | 3 |
| MART 210 | Integrated Navigation I: RADAR/ARPA/ECDIS | 4 |
| MART 212 | Marine Dry Cargo Operations | 3 |
| MART 215 | Seamanship II | 3 |
| MART 303 | Celestial Navigation | 3 |
| MART 307 | Global Maritime Distress Safety System | 3 |
| MART 310 | Integrated Navigation II: Electronic Navigation | 2 |
| MART 313 | Marine Liquid Cargo Operations | 3 |
| MART 321 | Navigation Rules, International and Inland | 2 |
| MART 410 | Integrated Navigation III: Bridge Watchstanding | 2 |
| MART 498 | Maritime Medical Care | 2 |
| NVSC 200 | Naval Science for the Merchant Marine Officer | 3 |
| Cruise Coursework: | | |
| MART 200 | Deck Sea Training I: Basic Communications, Navigation and Seamanship | 4 |
| MART 300 | Deck Sea Training II: Intermediate Communications, Navigation and Seamanship | 4 |
| | or MART 350 or Deck Sea Training II – Commercial Internship | |
| MART 400 | Deck Sea Training III: Advanced Communications, Navigation and Seamanship | 4 |

Courses complete a Training Record Book which includes USCG required Basic Safety Training, Ratings Performing a Navigational Watch, First Aid Provider, and Officer in Charge of a Navigational Watch. All STCW related courses must be completed with a C or better to meet license standards. Furthermore, the Midshipmen are required to complete mandatory sea service, participate in the USCG approved Corps of Midshipmen License Option Program, complete a degree, and pass license examination administered by the USCG. Candidates will also have to follow all regulations set forth in 46 CFR 1.910 and 46 CFR 310, STCW as amended, and USCG Texas A&M Maritime Academy approved

Standard Operating Procedure and any other regulations required by Texas A&M Maritime Academy License Option programs.

This degree requires full participation in the Texas A&M University Maritime Academy Corps of Cadets as a qualified License Option cadet. Refer to the University catalog section for the Texas A&M Maritime Academy for detailed requirements. In addition to the academic requirements outlined here, the cadet must also complete the following requirements to receive the degree:

- Successfully complete required sea service and minimum training cruise requirements.
- Pass a comprehensive professional examination (either the Third Mate Unlimited- Oceans or Third Assistant Engineering Unlimited) administered by the U.S. Coast Guard (USCG).
- Successfully complete all competencies required by the International Convention on Standards for Training, Certification and Watchkeeping (STCW).

Note: STCW competency certifications expire 5 years after completion. If the cadet does not complete the degree within that time period, the cadet will be required to revalidate the expired competency prior to graduation.

Doctor of Philosophy in Marine Biology

The PhD degree in Marine Biology is a joint degree program with Texas A&M University, Texas A&M University Galveston Campus and Texas A&M University–Corpus Christi. The program is interdisciplinary, involving courses and linking faculty from the TAMU Colleges of Science (SCI), Agriculture and Life Sciences (COALS), Geosciences (GEOS), TAMU Galveston Campus (TAMUG) and TAMU-Corpus Christi (TAMUCC).

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 96)
- Degree Plan (p. 96)
- Transfer of Credit (p. 97)
- Research Proposal (p. 97)
- Examinations (p. 97)
 - Preliminary Examination (p. 97)
 - Preliminary Examination Format (p. 97)
 - Preliminary Examination Scheduling (p. 98)
 - Report of Preliminary Examination (p. 98)
 - Retake of Failed Preliminary Examination (p. 98)
 - Final Examination (p. 98)
 - Report of Final Examination (p. 99)
- Dissertation (p. 99)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 99)
- Time Limit (p. 100)
- Continuous Registration (p. 100)
- Admission to Candidacy (p. 100)
- Languages (p. 100)
- 99-Hour Cap on Doctoral Degree (p. 100)
- Application for Degree (p. 101)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Molecular and Environmental Plant Sciences

Chair: D. B. Hays

The Faculty of Molecular and Environmental Plant Sciences (MEPS) has members in the Colleges of Agriculture and Life Sciences, Geosciences, and Science and is administered through the Department of Soil and Crop Sciences. Degree programs are available leading to MS and PhD degree in molecular and environmental plant sciences. Program requirements are determined and supervised by MEPS faculty. Degree programs are prepared on an individual basis by the graduate students in consultation with their advisory committee. Students hold appointments, for administrative purposes, in the department of their major professors.

Molecular and environmental plant sciences seeks to understand the molecular basis for functions and behavior of plants in natural environments. It blends botany, ecology, molecular biology, chemistry, genetics and physics. Traditionally, plant scientists have been interested in the improvement of agriculture, and many of the most basic findings on photoperiodism, mineral nutrition, plant growth regulators, morphogenesis, postharvest physiology and plant competition have had major effects on modern agriculture. Today the unifying goal of plant science is to understand and improve plants. This goal involves significant interdisciplinary interactions with molecular genetics, plant breeding, environmental physics, agronomy and other plant-agriculture disciplines.

Graduate degree programs are individually designed to prepare graduates for careers in specialized areas of the discipline including molecular biology, metabolism, development, physiological ecology and environmental or crop physiology. Faculty members hold appointments in the Departments of Atmospheric Sciences, Biochemistry and Biophysics, Biology, Ecosystem Science and Management, Entomology, Horticultural Sciences, Plant Pathology and Microbiology, and Soil and Crop Sciences. Courses in these departments support the curriculum along with those in chemistry, genetics, mathematics, physics and statistics.

All graduate students participate in the student seminar program, the faculty-sponsored visiting scientist seminar program, other faculty-sponsored special programs, the core curriculum of courses and regional and national scientific meetings. These activities lend continuity and unity to the graduate student group just as research topics and the selection of supporting courses lend diversity to individual programs.

<https://meps.tamu.edu>

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

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| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

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| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 102)
- Degree Plan (p. 102)
- Credit Requirements (p. 103)
- Transfer of Credit (p. 103)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 103)
- Thesis Option (p. 103)
 - Thesis Proposal (p. 104)
 - Final Examination/Thesis Defense (p. 104)
- Non-Thesis Option (p. 104)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional

Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the “Office of Graduate and Professional Studies Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student’s GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master’s degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student’s advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student’s advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student’s major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 105)
- Continuous Registration (p. 105)
- Time Limit (p. 105)
- Foreign Languages (p. 105)
- Application for Degree (p. 105)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Molecular and Environmental Plant Sciences

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

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| 4 | Complete the preliminary examination. | <p>When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.</p> <p>Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS.</p> | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | <p>When: At least 20 working days prior to the submission of the Request for the Final Examination.</p> <p>Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS.</p> | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | <p>When: Before submitting request to schedule final examination.</p> <p>Approved by: OGAPS</p> | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> | |
| 7 | Apply for degree; pay graduation fee. | <p>When: During the first week of the final semester; see OGAPS calendar for deadlines.</p> | <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 106) • Degree Plan (p. 107) • Transfer of Credit (p. 107) • Research Proposal (p. 107) • Examinations (p. 108) <ul style="list-style-type: none"> • Preliminary Examination (p. 108) • Preliminary Examination Format (p. 108) • Preliminary Examination Scheduling (p. 108) • Report of Preliminary Examination (p. 108) • Retake of Failed Preliminary Examination (p. 109) • Final Examination (p. 109) • Report of Final Examination (p. 109) • Dissertation (p. 109) | |
| 8 | Submit request for permission to hold and announce final examination. | <p>When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines.</p> <p>Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS.</p> | <h2>Student's Advisory Committee</h2> <p>After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.</p> <p>If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University</p> | |
| 9 | Successfully complete final examination. | <p>When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam.</p> <p>Approved by: Advisory committee and OGAPS</p> | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | <p>When: See OGAPS calendar for deadlines.</p> <p>Approved by: Advisory committee, department</p> | | |

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty.

The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 110)
- Time Limit (p. 110)
- Continuous Registration (p. 110)
- Admission to Candidacy (p. 110)
- Languages (p. 110)
- 99-Hour Cap on Doctoral Degree (p. 110)
- Application for Degree (p. 111)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Neuroscience

Chair: Dr. Michael Smotherman

The Graduate Training Program in Neuroscience is jointly administered through both Texas A&M University and the Texas A&M University Health Science Center and designed to prepare students to become successful independent researchers that can help society meet wide-ranging needs in industry, medicine, defense and academic fields. Our interdisciplinary program spans several colleges (Science, Medicine, Liberal Arts, Engineering, and Veterinary Medicine) and brings together researchers with expertise in biology, psychology, veterinary integrative biosciences, health and kinesiology, engineering, and experimental therapeutics, thereby offering our students access to a breadth of tools and training not normally found in single departments.

Neuroscience is a field devoted to the scientific study of the nervous system, from its molecular/cellular underpinnings to the organization of neural circuits, and the manifestation of this biological/neurochemical machinery as behavioral, physiological and psychological processes. It aims to detail both how the normal system operates and how alterations in function contribute to clinical diseases, such as mental illness, dementia, developmental disorders, neurodegenerative diseases, chronic pain, drug addiction, and the loss of function with aging or neural injury.

Major breakthroughs in neuroscience research often come from the fusion of novel technologies applied to basic questions. Our program

facilitates discovery by giving students a solid knowledge base in fundamental neuroscience and then putting them in position to conduct cutting-edge research using state of the art tools in a wide variety of research areas. The training program emphasizes flexibility by allowing each student to work with their thesis committee to design a unique degree plan that best suits his or her long-term objectives.

Students who wish to work with a faculty member at Texas A&M should apply for admission through the Texas A&M Office of Graduate Admissions. Students select a faculty mentor upon entering the graduate program or at the end of their first year (after laboratory rotations). Graduate assistantships and fellowships are available from the neuroscience program and participating departments.

Mission Statement

Neuroscience is a rapidly growing and diverse academic discipline that will significantly influence many aspects of our society over the next century through its impacts on human health, behavior, and emerging technologies in computer science and engineering. The interdisciplinary graduate program in neuroscience at Texas A&M prepares students to meet these societal needs by providing a comprehensive training that spans these broad disciplines by bringing together faculty, staff and students from across many colleges and departments. Students obtaining a Masters of Science in Neuroscience are prepared to enter a wide range of jobs in the biomedical and engineering sectors. The degrees are jointly conferred by TAMU and TAMUHSC.

<http://tamin.tamu.edu/>

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 112)
- Degree Plan (p. 113)
- Credit Requirements (p. 113)
- Transfer of Credit (p. 113)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 113)
- Thesis Option (p. 114)
 - Thesis Proposal (p. 114)
 - Final Examination/Thesis Defense (p. 114)
- Non-Thesis Option (p. 115)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.

5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 115)
- Continuous Registration (p. 115)
- Time Limit (p. 115)
- Foreign Languages (p. 115)
- Application for Degree (p. 115)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Neuroscience

<http://tamin.tamu.edu/>

Chair: Dr. Michael Smotherman

Texas A&M Institute for Neuroscience PhD Program Overview

The Graduate Training Program in Neuroscience at Texas A&M University is designed to prepare students to become successful independent researchers that can help society meet wide-ranging needs in industry, medicine, defense and academic fields. Our interdisciplinary program spans several colleges (Science, Medicine, Liberal Arts, Engineering, Veterinary Medicine) thereby offering our students access to a breadth

of tools, training and expertise not normally found in single departments. Major breakthroughs in Neuroscience research often come from the fusion of novel technologies applied to basic questions. Our program facilitates discovery by giving students a solid knowledge base in fundamental neuroscience and then putting them in position to conduct cutting-edge research using state of the art tools in a wide variety of research areas. The training program emphasizes flexibility by allowing each student to work with their thesis committee to design a unique degree plan that best suits his or her long-term objectives.

Mission Statement

Neuroscience is a rapidly growing and diverse academic discipline that will significantly influence many aspects of our society over the next century through its impacts on human health, behavior, and emerging technologies in computer science and engineering. The interdisciplinary graduate program in Neuroscience at Texas A&M prepares students to meet these societal needs by providing a comprehensive training that spans these broad disciplines by bringing together faculty, staff and students from across many colleges and departments. The program provides formal training, research opportunities and public exposure for students seeking careers in basic, translational and clinical neuroscience research, teaching and industry. Students completing the Doctor of Philosophy in Neuroscience are prepared for teaching/research positions within academia and research positions in the private sector. A Masters of Science is also available for those seeking non-academic positions. The degrees are jointly conferred by TAMU and TAMUHSC.

Rotations and Research

Two seven-week (half-semester) rotations with TAMIN faculty during the fall are required of incoming students. Students may register for a third rotation in the Spring Semester if needed. Those that hold a master's degree may waive the rotations requirement if they have already identified a thesis advisor and *the advisor requests the exemption in writing to the Graduate advisor.*

Students are expected to begin full-time in the lab of their choice by the end of the spring semester of year 1. From this point, students will focus almost exclusively on their thesis work.

A list of recommended and elective courses for students in the PhD program can be obtained from the Graduate Advisor or Chair.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 117)
- Degree Plan (p. 117)
- Transfer of Credit (p. 118)
- Research Proposal (p. 118)
- Examinations (p. 118)
 - Preliminary Examination (p. 118)
 - Preliminary Examination Format (p. 118)
 - Preliminary Examination Scheduling (p. 119)

- Report of Preliminary Examination (p. 119)
- Retake of Failed Preliminary Examination (p. 119)
- Final Examination (p. 120)
- Report of Final Examination (p. 120)
- Dissertation (p. 120)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.

- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 120)
- Time Limit (p. 121)
- Continuous Registration (p. 121)
- Admission to Candidacy (p. 121)
- Languages (p. 121)
- 99-Hour Cap on Doctoral Degree (p. 121)
- Application for Degree (p. 122)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Toxicology

<https://toxicology.tamu.edu>

Chair: Ivan Rusyn, MD, PhD

Toxicology research and training at TAMU has been recognized as a distinct discipline since 1970 when the Texas Higher Education Coordinating Board approved an MS and PhD program in toxicology.

The academic component of the program is administered by the Interdisciplinary Faculty of Toxicology (IFT), which is composed of faculty and graduate students from multiple departments, colleges and associated laboratories. The Toxicology program crosses boundaries in veterinary medicine, health sciences, environmental sciences, chemistry/biochemistry, biology, and physics. Admission to the program requires the successful completion of courses in advanced biology and/or chemistry or their equivalents, and approval by both the IFT and a participating academic department. Graduate research assistantships and scholarships are available on a competitive basis.

Completion of a thesis is required for the MS in Toxicology.

A list of recommended and elective courses for students in the MS program can be obtained from the Toxicology Graduate Advisor or Chair.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 123)
- Degree Plan (p. 123)
- Credit Requirements (p. 123)
- Transfer of Credit (p. 123)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 124)
- Thesis Option (p. 124)
 - Thesis Proposal (p. 125)
 - Final Examination/Thesis Defense (p. 125)
- Non-Thesis Option (p. 125)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 125)
- Continuous Registration (p. 126)
- Time Limit (p. 126)
- Foreign Languages (p. 126)
- Application for Degree (p. 126)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Toxicology

https://toxicology.tamu.edu/

Chair: Ivan Rusyn, MD, PhD

Toxicology research and training at Texas A&M has been recognized as a distinct discipline since 1970 when the Texas Higher Education Coordinating Board approved an MS and PhD program in toxicology. The academic component of the program is administered by the Interdisciplinary Faculty of Toxicology (IFT), which is composed of faculty and graduate students from multiple departments, colleges, and associated laboratories. The Toxicology program crosses boundaries in veterinary medicine, health sciences, environmental sciences, chemistry/biochemistry, biology, and physics. Admission to the program requires

the successful completion of courses in advanced biology and/or chemistry or their equivalents, and approval by both the IFT and a participating academic department. Graduate research assistantships and scholarships are available on a competitive basis.

Completion of a dissertation is required for the PhD in Toxicology.

A list of recommended and elective courses for students in the PhD program can be obtained from the Toxicology Graduate Advisor or Chair.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

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|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h2>Program Requirements</h2> <ul style="list-style-type: none">• Student's Advisory Committee (p. 127)• Degree Plan (p. 128)• Transfer of Credit (p. 128)• Research Proposal (p. 128)• Examinations (p. 129)<ul style="list-style-type: none">• Preliminary Examination (p. 129)• Preliminary Examination Format (p. 129)• Preliminary Examination Scheduling (p. 129)• Report of Preliminary Examination (p. 129)• Retake of Failed Preliminary Examination (p. 130)• Final Examination (p. 130)• Report of Final Examination (p. 130)• Dissertation (p. 130) | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | <h2>Student's Advisory Committee</h2> <p>After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.</p> <p>If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University</p> | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 131)
- Time Limit (p. 131)
- Continuous Registration (p. 131)
- Admission to Candidacy (p. 131)
- Languages (p. 131)
- 99-Hour Cap on Doctoral Degree (p. 131)
- Application for Degree (p. 132)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Water Management and Hydrological Science

Head: John R. Giardino

Program Coordinator: C. Prakash Khedun

The Water Management and Hydrological Science (WMHS) graduate degree program is supervised by an interdisciplinary faculty from multiple department and colleges. The faculty have expertise in the bio-physical, geo-chemical, management, public health, social sciences, and engineering. The program offers two masters' degrees (thesis and non-thesis options) and a Ph.D. The curriculum is designed to allow students to become leaders in their focal areas of water while making connections to colleagues in other related disciplines.

The **Master of Science (MS)** degree is designed to complement students undergraduate discipline by obtaining scientific, technical, or managerial expertise in water science. Students complete 8 hours of WMHS courses, 12 hours of water courses, one statistics, and research methods course. In addition to research hours students may take up to 8 hours of elective coursework. Students may opt to add an additional course in lieu of some research hours. Completion of a thesis is required for the MS degree.

Graduate research assistantships are available on a competitive basis.

For more information on the degree application, course requirements and program advisors go to the website <http://waterprogram.tamu.edu>.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 132)
- Degree Plan (p. 133)
- Credit Requirements (p. 133)
- Transfer of Credit (p. 133)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 133)
- Thesis Option (p. 133)
 - Thesis Proposal (p. 133)
 - Final Examination/Thesis Defense
- Non-Thesis Option (p. 133)

Student's Advisory Committee (p. 132)

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan (p. 133)

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the second semester of registration, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement (p. 133)

The minimum requirements for the Thesis option is 32 credit hours. The student is required to complete 8 credit hours of core course work, 15 credit hours of required water courses, up to 6 credit hours of free elective courses, and a minimum of 1 credit hour of research. Maximum of 4 credit hours of 685 courses towards the Master of Science degree are permitted.

Transfer of Credit (p. 133)

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.**

Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 133)

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).

7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if

applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety (<http://rcb.tamu.edu>) website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If

necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Master of Science in Water Management and Hydrological Science does not offer a Non-Thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 135)
- Time Limit (p. 135)
- Foreign Languages (p. 135)
- Internship or Practicum (p. 135)
- Application for Degree (p. 135)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Water Management and Hydrological Science, the student must complete 9 credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisor committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master in Water Management and Hydrological Science degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Water Management and Hydrological Science

Head: John R. Giardino

Program Coordinator: C. Prakash Khedun

The Water Management and Hydrological Science (WMHS) graduate degree program is supervised by an interdisciplinary faculty from multiple department and colleges. The faculty have expertise in the bio-physical, geo-chemical, management, public health, social sciences and engineering. The program offers two masters' degrees (thesis and non-thesis options) and a Ph.D. The curriculum is designed to allow students to become leaders in their focal areas of water while making connections to colleagues in other related disciplines.

The **Master of Water Management and Hydrological Science (MWM)** degree is a 36 hour non-thesis degree designed to prepare students for careers in the critically important areas of water management. It is structured to enhance problem solving using technical and managerial skills. The degree incorporates principles from economics, engineering, management, policy analysis and science and requires a comprehensive final exam. This approach provides students with the education and training to contribute to advancements in managing water quality and quantity for the world, the nation and the State of Texas.

Minimum degree requirement includes completion of 8 credit hours of WMHS courses, 12 credit hours of common body of knowledge water courses, 6 credit hours of water courses, and up to 10 credit hours of electives courses.

For more information on degree application, course requirements and program advisors go to the website <http://waterprogram.tamu.edu>.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 135)
- Degree Plan (p. 136)
- Credit Requirements (p. 136)
- Transfer of Credit (p. 136)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 136)
- Thesis Option (p. 137)
- Final Examination/Thesis Option
- Non-Thesis Option (p. 137)

Student's Advisory Committee (p. 135)

After receiving admission to the graduate studies and enrolling for coursework, the student will consult with the graduate coordinator

concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**. The chair or one of the co-chairs of the advisory committee must be from the Water Management and Hydrological Science faculty. At least one or more of the members must be from an academic program other than Water Management and Hydrological Science.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members from the faculty of Water Management and Hydrological Science may serve as chair of a student's advisory committee. Other graduate faculty members may serve as co-chair with an individual from the Water Management and Hydrological Science faculty. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the Program Chair appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, are responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan (p. 136)

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the second semester of registration, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement (p. 136)

The minimum requirements for the non-thesis option are 30 hours of coursework and a satisfactory final comprehensive oral examination. A student is required to complete 8 hours of required core water courses, 12 hours of common body of knowledge courses, 12–15 hours of designated electives, and 4–8 hours of free electives.

Transfer of Credit (p. 136)

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 136)

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684 and 685 may not exceed a total of 6 credit hours.
 - A maximum of 4 hours of 684 (Professional Internship); and
 - Up to 6 hours of 685 (Directed Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No more than 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and by the Office of Graduate and Professional Studies.

Thesis Option

Please note that the thesis option does not apply to the MWM Water Management and Hydrological Science program.

Final Examination/Thesis Option

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U**

for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan

coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 138)
- Continuous Registration (p. 138)
- Time Limit (p. 138)
- Foreign Languages (p. 138)
- Application for Degree (p. 138)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Water Management and Hydrological Science

Head: John R. Giardino

Program Coordinator: C. Prakash Khedun

The Water Management and Hydrological Science (WMHS) graduate degree program is supervised by an interdisciplinary faculty from multiple department and colleges. The faculty have expertise in the bio-physical, geo-chemical, management, public health, social sciences and engineering. The program offers two masters' degrees (thesis and non-thesis options) and a Ph.D. The curriculum is designed to allow students to become leaders in their focal areas of water while making connections to colleagues in other related disciplines.

Each student must have a graduate committee chair before being accepted in the program. Students work with their chair and the advisory committee to develop a course of study satisfying the curriculum. Graduate research assistantships are available on a competitive basis.

For more information on degree application, course requirements and program advisors go to the website <http://waterprogram.tamu.edu>.

Work leading to the degree of Doctor of Philosophy (PhD) is designed to give students a comprehensive knowledge of water science and hydrology and provide training in research methods. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a minimum of 64 hours is required on the degree plan for the degree of Doctor of

Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | When: Before preliminary examination. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: No later than 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduate fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 140)
- Degree Plan (p. 140)
- Transfer of Credit (p. 140)
- Research Proposal (p. 141)
- Examinations (p. 141)
 - Preliminary Examination (p. 141)
 - Preliminary Examination Format (p. 141)
 - Preliminary Examination Scheduling (p. 141)

- Report of Preliminary Examination (p. 141)
- Retake of Failed Preliminary Examination (p. 142)
- Final Examination (p. 142)
- Report of Final Examination (p. 142)
- Dissertation (p. 143)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

A maximum of 4 credit hours of 685 courses are permitted towards the PhD degree.

Additional Requirements

Additional Requirements

- Residence (p. 143)
- Time Limit (p. 143)
- Continuous Registration (p. 143)
- Admission to Candidacy (p. 143)
- Languages (p. 144)
- 99-Hour Cap on Doctoral Degree (p. 144)
- Application for Degree (p. 144)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident

study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,

- 3. passed the preliminary examination (written and oral portions),
- 4. submitted an approved dissertation proposal,
- 5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences

- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Digital Humanities - Certificate

This transcribed certificate offers masters or doctoral students who intend to practice in an academic environment, museum, or other cultural institution the opportunity to acquire knowledge of digital tools, theories, and methodologies and to become competent in conducting digital practice. The Digital Humanities Certificate provides a basic introduction to the development and application of information technology in the context of research and practice in the humanities. The certificate provides students with the skills, applied and theoretical, that are necessary to apply computational techniques to complex research problems as well as practical tasks in the humanities. The certificate program is open to students from any graduate degree program at Texas A&M University and the plan of study comprises 12 hours of coursework, including 3 hours of independent study (685 Directed Study) in any participating Digital Humanities faculty's home discipline. At least one course must be outside the student's home department. Some courses may or may not satisfy the certificate requirements, depending upon their content. For more information, see <http://dhcertificate.tamu.edu>.

Program Requirements

Certificate Requirements:

Certificate candidates must complete 12 hours of coursework as follows:

- 6 hours from approved course list
- 3 hours from approved course list outside the student's home department.
- 3 hours Independent Study. The independent study must include the completion of a digital humanities project. A report on the independent study project must be submitted to the certificate coordinator upon completion of the project.¹
- Successful course completion requires the award of a minimum grade of B.

| Code | Title | Semester Credit Hours |
|-----------------------------------------------|------------------------------------------|-----------------------|
| Independent Study ¹ | | 3 |
| Select three from the following: ² | | 9 |
| COMM 662 | Survey of Media Studies ³ | |
| COMM 663 | Seminar in Media Studies ³ | |
| COMM 665 | Communication and Technology | |
| CSCE 610 | Hypertext/Hypermedia Systems | |
| CSCE 655 | Human-Centered Computing | |
| CSCE 656 | Computers and New Media | |
| CSCE 667 | Seminar in Human-Centered Computing | |
| CSCE 671 | Computer-Human Interaction | |
| CSCE 675 | Digital Libraries | |
| EDCI 655 | Contemporary Visual Culture ³ | |

| | | |
|-----------------------------|--------------------------------------------------------------------------------------------------------------|----|
| EDCI 676 | Evaluation and Implementation of Electronic Learning Materials ³ | |
| EDTC 621 | Graphic Communication and Interface Design ³ | |
| EDTC 631 | Educational Video ³ | |
| EDTC 641 | Educational Game Design ³ | |
| ENGL 603 | Bibliography and Literary Research (course only open to graduate students in English and Philosophy) 3 | |
| ENGL 604 | Topics in Digital Research | |
| ENGL 666 | Topics in Textual Studies and Book History ³ | |
| HIST 628 | Historiography (course only open to graduate students in History) ³ | |
| HIST 629 | Research Methods in History (course only open to graduate students in History) ³ | |
| HIST 630 | Digital Methods in Historical Research | |
| HIST 666 | History of Technology | |
| VIZA 616 | Rendering and Shading | |
| VIZA 641 | Visual Storytelling | |
| VIZA 654/ CSCE 646 | The Digital Image | |
| VIZA 656/ CSCE 647 | Image Synthesis | |
| VIZA 665 | Digital Compositing | |
| Total Semester Credit Hours | | 12 |

¹ For a list of Digital Humanities Faculty, see <http://dhcertificate.tamu.edu/faculty>. For additional information on what constitutes a digital project capable of fulfilling the certificate requirements, see the FAQ page of the certificate website: <http://dhcertificate.tamu.edu/faq>.

² Student may request approval from certificate coordinator to include courses with digital humanities content not appearing on this course list. For details, see the FAQ page of the certificate website: <http://dhcertificate.tamu.edu/faq>.

³ Certificate credit only available for sections that include digital humanities credit, syllabus required. For details, see the FAQ page of the certificate website: <http://dhcertificate.tamu.edu/faq>.

Energy - Certificate

The Texas A&M Energy Institute's certificate program, the "Certificate in Energy," is offered by taking 10 modules of the Master of Science in Energy degree program either face-to-face in College Station, Texas or online via distance learning. Seven modules are from the required/foundational module list and three from the prescribed elective/specialized module list.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------|--------------------------------------------------------------------------------------------|-----------------------|
| Required Courses | | |
| ICPE 601 | Environmental Issues of Energy Systems | 1.5 |
| ICPE 602 | Reservoir Characterization and Modeling | 1.5 |
| ICPE 603 | Bioenergy | 1.5 |
| ICPE 604 | Energy Systems Engineering I | 1.5 |
| ICPE 607 | Energy Accounting | 1.5 |
| ICPE 608 | Beyond Science and Technology: The Role of Policy in Future of Energy in the U.S. | 1.5 |
| ICPE 609 | Introduction to U.S. Energy Law and Policy | 1.5 |
| Prescribed Electives | | |
| Select three of the following: | | 4.5 |
| ICPE 605 | Energy Systems Engineering II | |
| ICPE 606 | Introduction to Optimization | |
| ICPE 610 | The Global Energy Future | |
| ICPE 611 | Economics of Energy | |
| ICPE 612 | Entrepreneurship in Energy | |
| ICPE 613 | Natural and Shale Gas Monetization: Technologies, Fundamentals, Economics and Applications | |
| ICPE 614 | CO2 Sequestration | |
| ICPE 615 | Smart Grid Fundamentals | |
| ICPE 616 | Multi-functional Materials for Energy Conversion | |
| ICPE 617 | Gas Separations for Energy: Fundamentals, Applications and New Directions | |
| ICPE 618 | Carbon Capture, Utilization and Storage, CCUS | |
| ICPE 619 | Nanomaterials Engineering and Energy Storage | |
| ICPE 620 | Thermoelectric Materials and Devices | |
| ICPE 621 | Thermoelectrics: Fundamentals of Electronic and Thermal Transport | |
| ICPE 622 | Energy Efficiency in Buildings | |
| ICPE 623 | Water-Energy-Food Nexus: Towards Sustainable Resource Allocation | |
| ICPE 624 | Energy-Water-Nexus | |
| ICPE 625 | Integrated Risk Management for Exploration and Production Projects | |
| ICPE 626 | Safety in Energy Systems | |
| ICPE 627 | Interfacial Phenomena of Energy Systems | |
| ICPE 628 | Multi-physics Geomechanisms for Energy Applications | |
| Total Semester Credit Hours | | 15 |

Geographic Information Science - Certificate

GIS technologies are applied to wide-ranging fields with interests in spatially distributed information such as transportation, environmental/resource management, marketing, facility management, healthcare delivery, agriculture and planning. The need for qualified individuals in Geospatial Technologies is increasing. The GIS certificate program has been designed to meet this demand.

The Office of the President has approved this program, and it will appear on the official Texas A&M University transcript. A paper certificate can also be requested if desired. This certificate is jointly offered between the Departments of Geography and Ecosystem Science and Management. Courses in the program are taught by faculty in both departments as well as by faculty in other departments at Texas A&M with expertise in GIS. Its administrative home lies in Geography.

This certificate program has been designed to meet the growing demand for qualified individuals in the field. While not all courses in the certificate are currently offered in online modality, it is possible to obtain the certificate via distance education. For more detailed information, please visit the program website or contact the academic advisor in the Department of Geography or in Ecosystem Science and Management.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------|------------------------------------------------------------------|-----------------------|
| Introductory Level | | |
| Select one of the following: | | 3 |
| ESSM 651 | Geographic Information System for Resource Management | |
| GEOG 660 | Applications in GIS | |
| MARS 625 | GIS Use in Coastal Resources | |
| PLAN 625 | Geographical Information Systems in Landscape and Urban Planning | |
| Intermediate Level | | |
| Select two of the following: | | 6 |
| ESSM 652 | Advanced Topics in Geographic Information Systems | |
| or BAEN 652 | Advanced Topics in Geographic Information Systems | |
| GEOG 665 | GIS-Based Spatial Analysis and Modeling | |
| PLAN 626 | Advanced GIS in Landscape Architecture and Urban Planning | |
| Specialized GIS Courses | | |
| Select one of the following: | | 3 |
| CVEN 658 | Civil Engineering Applications of GIS | |
| ENTO 625/ | Landscape Ecology | |
| GEOG 625 | | |
| or GEOG 625/ | Landscape Ecology | |
| ENTO 625 | | |
| ESSM 660 | Landscape Analysis and Modeling | |
| ESSM 663/ | Applied Spatial Statistics | |
| SCSC 663 | | |

| | | |
|-----------------------------|---------------------------------------------------------|----|
| ESSM 665 | Computer Programming for Natural Resources Applications | |
| GEOG 662 | GIS in Land and Property Management | |
| GEOG 676 | GIS Programming | |
| GEOG 678 | WebGIS | |
| MARS 626 | Advanced GIS for Coastal Systems | |
| PLAN 612 | Transportation in City Planning | |
| Total Semester Credit Hours | | 12 |

Health Systems and Design - Certificate

This interdisciplinary certification program was created by the colleges of Architecture and Medicine to promote research, innovation, and communication focusing on health facility planning and design. The program is available to students pursuing any graduate degree at Texas A&M University. Though the program emphasizes a cross-disciplinary perspective, it also ensures that a student develops in-depth understanding and ability within the field of health systems design.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------------------------------------|--------------------------------------------------------|-----------------------|
| Required Courses | | |
| ARCH 675 | Health Design and Research | 3 |
| ARCH 681 | Seminar ¹ | 1 |
| Select from the following: | | 6 |
| ARCH 605 | Architectural Design I ² | |
| ARCH 606 | Architectural Design II ² | |
| ARCH 607 | Architectural Design III ² | |
| ARCH 608 | Architectural Design IV ² | |
| ARCH 660 | Design Programming ² | |
| ARCH 693 | Professional Study | |
| COSC 670 | Facilities Asset Management ² | |
| COSC 693 | Professional Study | |
| CPSY 677 | Practicum in Clinical Geropsychology ² | |
| LAND 693 | Professional Study | |
| LAND 661 | Visual Quality for Design and Planning ² | |
| LDEV 665/ | Land Development Trends | |
| LDEV 693 | | |
| LDEV 687 | Development Feasibility and Design | |
| & LDEV 688 | and Development Feasibility and Design II ² | |
| LDEV 693 | Professional Study | |
| PLAN 631 | Health Systems Planning and Policy ² | |
| PLAN 693 | Professional Study | |
| Elective Courses ^{3,4} | | |
| Select two of the following: | | 6 |
| ARCH 624 | Theory of Placemaking | |
| ARCH 674 | Typologies of Contemporary Hospital Design | |

| | | |
|-----------------------------|----------------------------------------------------------------|----|
| ARCH 676 | Survey of Human Behavior and Design | |
| ARCH 678 | Foundations of Healthcare Design | |
| ARCH 689 | Special Topics in... (Facilitation for Planners and Designers) | |
| CARC 601 | Foundations of Research in Planning and Design | |
| CARC 602 | Research Methods in Planning and Design | |
| EPSY 647 | Lifespan Development | |
| HLTH 334/ WGST 334 | Women's Health | |
| HLTH 353 | Drugs and Society | |
| HLTH 631 | Community and Public Health | |
| HLTH 660 | Health Issues in Aging, Dying and Death | |
| LAND 640 | Research Methods in Landscape Architecture | |
| LAND 661 | Visual Quality for Design and Planning | |
| LDEV 661 | Development and the Environment | |
| LDEV 671 | Sustainable Development | |
| PHPM 601 | Foundations of Public Health | |
| PHPM 605 | Introduction to Health Policy and Management | |
| PLAN 633 | Planning for Healthy Communities | |
| PLAN 634 | Environmental Health Policy and Planning | |
| PSYC 607 | Experimental Psychology | |
| PSYC 610 | Organizational Psychology | |
| PSYC 615/ NRSC 615 | Perceptual Processes | |
| PSYC 639 | Pediatric Psychology | |
| Total Semester Credit Hours | | 16 |

- ¹ Course must include health focus.
- ² Depending on health emphasis any CAPSTONE Project from any discipline, as long as it is related to health and approved by the Center's Executive Council.
- ³ Other electives may be counted towards the certificate if approved by the Director of the Center for Health Systems & Design.
- ⁴ One course must be taken within the student's department and one outside of the student's department. The course within the student's department must be taken with a faculty member who is a faculty fellow in the Center for Health Systems & Design. A list of current faculty fellows is available on the center website (<http://archone.tamu.edu/chsd/>).

International Petroleum Management - Certificate

As part of this graduate program in the Department of Petroleum Engineering, the Mays Business School will award the degree candidate a Certificate in International Petroleum Management. To qualify for this certificate the student must complete at least 18 semester hours of coursework in the Mays Business School. A required course sequence list

can be found at http://engineering.tamu.edu/media/632499/ipm_req.pdf. Any variation in the course sequence must be approved by the IPM Program Coordinator in the Mays Business School and the Graduate Advisor in the Petroleum Engineering Department.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------|-----------------------------------------------------|-----------------------|
| Foundation Courses | | |
| Select four of the following: | | 12 |
| ACCT 640 | Accounting Concepts and Procedures I | |
| FINC 635 | Survey of Finance | |
| MGMT 655 | Survey of Management | |
| MKTG 621 | Survey of Marketing | |
| Electives | | |
| Select two of the following: | | 6 |
| FINC 645/ IBUS 645 | International Finance | |
| IBUS 489/ IBUS 689 | Special Topics in... (International Business Areas) | |
| ISTM 656 | Global Information Systems | |
| MGMT 678/IBUS 678 | International Management | |
| MGMT 679/IBUS 679 | International Business Policy | |
| MKTG 677/IBUS 677 | Multinational Marketing Management | |
| SCMT 667 | Logistics and Distribution Management | |
| Total Semester Credit Hours | | 18 |

Any variation in this course sequence in the College of Business must be approved by the IPM Program Coordinator in Mays Business School.

Prevention Science - Certificate

The certificate is to provide students from a variety of majors an interdisciplinary perspective on the science and practice related to the prevention of mental, emotional, and physical health problems and the promotion of well-being in these same domains.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|------------------------------------------------------|-----------------------|
| HLTH 630 | Health Program Planning | 3 |
| RPTS 689 | Special Topics in... | 3 |
| SPSY 638 | Systems Consultation and Prevention Science | 3 |
| SPSY 689 | Special Topics in... | 3 |
| Select one of the following: | | 3 |
| ALEC 625 | Program Evaluation and Organizational Accountability | |

EPSY 631 Program Evaluation

HLTH 632 Health Program Evaluation

Total Semester Credit Hours 15

Remote Sensing - Certificate

Remote Sensing (RS) technologies are applied to a wide-range of fields, such as environmental/ resource management, marketing, facility management, agriculture, planning, homeland security and intelligence. The need for qualified individuals in these fields is growing rapidly. The RS certificate program has been designed to meet this demand.

The Office of the President has approved this program, and it will appear on the official Texas A&M University transcript. A paper certificate can also be requested if desired. This certificate is jointly offered between the Departments of Geography and Ecosystem Science and Management. Courses in the program are taught by faculty in both departments as well as by faculty in other departments at Texas A&M with expertise in Remote Sensing. Its administrative home lies in Geography.

This certificate program has been designed to meet the growing demand for qualified individuals in this field. For more detailed information, please contact the academic advisor in the Department of Geography or in Ecosystem Science and Management or visit the program website (<http://ssl.tamu.edu/education/graduate-certificate-program>).

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------------|----------------------------------------------------------|-----------------------|
| Introductory Level | | |
| Select one of the following: | | 3 |
| ESSM 655 | Remote Sensing of the Environment | |
| GEOG 651 | Remote Sensing for Geographical Analysis | |
| Intermediate Level | | |
| Both are required: | | 6 |
| ESSM 656 | Advanced Remote Sensing | |
| GEOG 661 | Digital Image Processing and Analysis | |
| Specialized Remote Sensing Course | | |
| Select one of the following: | | 3 |
| ATMO 655 | Satellite Data in Meteorology | |
| ECEN 642 | Digital Image Processing | |
| ECEN 649 | Pattern Recognition | |
| GEOG 696 | Geomorphology and Remote Sensing | |
| INTA 653 | Technical Collections Systems for International Security | |
| Total Semester Credit Hours | | 12 |

Space Life Sciences - Certificate

Obtain a certificate in Space Life Sciences while pursuing your Ph.D. at Texas A&M University in Biomedical Engineering, Genetics, Kinesiology, Nuclear Engineering (Health Physics), Nutrition or a M.D./Ph.D. or Ph.D. in Medical Sciences from the Texas A&M University Health Sciences Center Graduate School of Biomedical Sciences. The Mentored Research Program in Space Life Sciences was created to produce scientists with a

broad understanding of the critical issues associated with long duration space flight and specific expertise in critical problem areas such as:

1. bone loss
2. muscle wasting
3. health effects of cosmic radiation
4. changes in metabolism
5. consequences of being in a catabolic state while in space

In addition, students will gain specific training in either nutritional and/or exercise physiology countermeasures against these major biological problems. Located a little over 100 miles from NASA/Johnson Space Center, students will have the unique opportunity to work with world leaders in space life sciences. For additional information, please visit the Space Life Sciences Graduate Program (<http://hlkn.education.tamu.edu/center/space-life-sciences-graduate-training-program>) website.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------|-------------------------------------------|-----------------------|
| KINE 646/ NUEN 646/ NUTR 646 | Fundamentals of Space Life Sciences | 3 |
| VMID 686 | Scientific Ethics | 1 |
| KINE 681/ NUEN 681/ NUTR 681 | Seminar (Space Life Sciences) | 1 |
| Select two of the following: | | 6 |
| KINE 649 | Applied Exercise Physiology | |
| NUEN 615 | Theory and Applications of Microdosimetry | |
| NFSC 641 | Nutritional Biochemistry I | |
| KINE 685/ NUEN 685/ NUTR 685 | Directed Studies | 6 |
| Total Semester Credit Hours | | 17 |

Transportation Planning - Certificate

The certificate in Transportation Planning program provides students with a substantive base of knowledge needed to be broadly successful in the transportation profession, as well as with specialized instruction tailored to building student skills and capabilities in three critical areas: Transportation Systems Planning, Transportation and Urban Design, and Transportation Policy. Students enrolled in the certificate program will further take a comprehensive capstone course. The Certificate is one of the few educational programs that addresses the field of transportation in a truly comprehensive, interdisciplinary manner. It is a partnership among the Department of Landscape Architecture and Urban Planning (LAUP) in the College of Architecture, the Texas Transportation Institute (TTI), the Department of Civil and Environmental Engineering, and the Bush School of Government and Public Service. The Certificate is housed in the Center for Housing and Urban Development in the College of Architecture. This program will be open to any graduate student at Texas A&M University with an interest in transportation. Certificate Coordinator: Dr. Wei Li. For more information, see <https://chud.arch.tamu.edu/Education/Transportation%20Certificate/Transportation%20Certificate.html>.

Program Requirements

| Code | Title | Semester Credit Hours |
|---------------------------------------------------|-----------------------------------------------------------------|-----------------------|
| Required Courses | | |
| PLAN 612 | Transportation in City Planning | 3 |
| Focus Area | | |
| Select nine semester credit hours of a focus area | | 9 |
| Capstone | | |
| PLAN 678 | Applied Transportation Studio: Site Planning and Traffic Impact | 3 |
| Total Semester Credit Hours | | 15 |

Focus Area

Multimodal Systems Planning

| Code | Title | Semester Credit Hours |
|------------------------------------------------------|-----------------------------------------------------------|-----------------------|
| Required | | |
| PLAN 670 | Urban Public Transportation Planning ¹ | 3 |
| Electives | | |
| Select six semester credit hours from the following: | | 6 |
| CVEN 618 | Traffic Engineering: Operations | |
| CVEN 672 | Engineering and Urban Transportation Systems | |
| PLAN 626 | Advanced GIS in Landscape Architecture and Urban Planning | |
| PLAN 650 | Disaster Response Planning | |
| PLAN 673 | Design for Sustainable Transportation | |
| PLAN 674 | Transportation System Analysis | |
| PLAN 676 | Transportation Investment Decisions | |
| Total Semester Credit Hours | | 9 |

¹ Students are advised to take PLAN 670 if available, but PLAN 673 will also satisfy this requirement.

Transportation and Urban Design

| Code | Title | Semester Credit Hours |
|------------------------------------------------------|----------------------------------------------|-----------------------|
| Required | | |
| PLAN 673 | Design for Sustainable Transportation | 3 |
| Electives | | |
| Select six semester credit hours from the following: | | 6 |
| CVEN 617 | Traffic Engineering: Characteristics | |
| CVEN 618 | Traffic Engineering: Operations | |
| CVEN 635 | Street and Highway Design | |
| CVEN 672 | Engineering and Urban Transportation Systems | |
| LAND 661 | Visual Quality for Design and Planning | |

| | | |
|-----------------------------|--------------------------------------|---|
| PLAN 670 | Urban Public Transportation Planning | |
| PLAN 674 | Transportation System Analysis | |
| PLAN 676 | Transportation Investment Decisions | |
| Total Semester Credit Hours | | 9 |

Transportation Planning and Public Policy

| Code | Title | Semester Credit Hours |
|------------------------------------------------------|--------------------------------------------------------------------|-----------------------|
| Required | | |
| PLAN 676 | Transportation Investment Decisions | 3 |
| Electives | | |
| Select six semester credit hours from the following: | | 6 |
| PSAA 611 | Public Policy Formation | |
| PSAA 616 | Managing Workplace Diversity in Public and Nonprofit Organizations | |
| PSAA 617 | U.S. State and Local Government: Institutions and Policy | |
| PSAA 622 | Public Finance | |
| PSAA 634 | Public Management | |
| PLAN 650 | Disaster Response Planning | |
| Total Semester Credit Hours | | 9 |

Transit Management

| Code | Title | Semester Credit Hours |
|---------------------------------|---------------------------------------------------|-----------------------|
| Required | | |
| Select one of the following: | | 3 |
| PLAN 670 | Urban Public Transportation Planning ¹ | |
| PLAN 673 | Design for Sustainable Transportation | |
| Electives | | |
| Planning and Civil Engineering: | | |
| Select one of the following: | | 3 |
| CVEN 618 | Traffic Engineering: Operations | |
| CVEN 632 | Transportation Engineering: Economics | |
| CVEN 672 | Engineering and Urban Transportation Systems | |
| PLAN 674 | Transportation System Analysis | |
| Management, Policy and Finance: | | |
| Select one of the following: | | 3 |
| MGMT 630 | Behavior in Organizations | |
| MGMT 639 | Negotiations in Competitive Environments | |
| MGMT 655 | Survey of Management | |
| MGMT 658 | Managing Projects | |
| MGMT 675 | Leadership in Organizations | |
| PLAN 676 | Transportation Investment Decisions | |
| PSAA 611 | Public Policy Formation | |

| | |
|----------|------------------------------------------------------------------|
| PSAA 622 | Public Finance |
| PSAA 634 | Public Management |
| PSAA 636 | Grant and Project Management in the Public and Nonprofit Sectors |
| PSAA 648 | Performance Management in the Public and Nonprofit Sectors |

Total Semester Credit Hours 9

¹ Students are advised to take PLAN 670 if available, but PLAN 673 will also satisfy this requirement.

College of Agriculture and Life Sciences

<http://aglifesciences.tamu.edu>

Administrative Officers

Vice Chancellor and Dean and Director, Texas A&M AgriLife Research - Patrick Stover, Ph.D.

Executive Associate Dean and Associate Dean for Research - Clare Gill, Ph.D.

Associate Dean for Academic Operations - Kim E. Dooley, Ph.D.

Associate Dean for Graduate Programs and Faculty Development - David W. Reed, Ph.D.

Associate Dean for Student Development - Chris L. Skaggs, Ph.D.

Assistant Dean for Student Success - Danielle A. Harris, Ph.D.

Departments

Departments

Agricultural Economics (p. 150)
 Agricultural Leadership, Education, and Communication (p. 164)
 Animal Science (p. 191)
 Biochemistry and Biophysics (p. 228)
 Biological and Agricultural Engineering (p. 240)
 Ecosystem Science and Management (p. 261)
 Entomology (p. 277)
 Horticultural Sciences (p. 290)
 Nutrition and Food Science (p. 314)
 Plant Pathology and Microbiology (p. 337)
 Poultry Science (p. 348)
 Recreation, Park and Tourism Sciences (p. 362)
 Soil and Crop Sciences (p. 379)
 Wildlife and Fisheries Sciences (p. 411)

Department of Agricultural Economics

<http://agecon.tamu.edu/graduate>

Head: C. P. Rosson, III

Graduate Advisor: D. J. Leatham

The Department of Agricultural Economics engages people in the use of economic analysis for making decisions involving agribusiness (including food and fiber production, supplying inputs, processing products and marketing), natural resources and communities. Students are taught to develop their leadership, analytical and communication skills. Disciplinary research and graduate education enhance the use of economic principles and research methods in solving economic problems facing society. Applied research programs emphasize the analysis of business and public policy issues.

In planning a student's program, the need for broad training, rather than narrow specialization, is recognized. Students (regardless of their primary interests) are encouraged to take not only advanced courses covering various fields within the department but also essential supporting courses in other departments. Students are expected to acquire a knowledge of economic theory, its application to contemporary agricultural production, agribusiness and resource problems, and the ability to employ analytical techniques in making policy and business decisions.

The teaching and research activities are grouped broadly as follows: agribusiness management and finance, production economics, markets and trade, policy analysis, and resource economics. The present and expanding program of research in the department affords the student a wide choice and capable guidance in thesis or dissertation research.

Master of Science (MS) and Master of Agribusiness (MAB) degrees are offered. MS students (p. 154) may choose between the thesis option (recommended for those students who plan to go on for further graduate studies) and the non-thesis option. Students who choose the MS non-thesis option take a greater number of courses. The Master of Agribusiness degree (p. 58) program is non-thesis, interdisciplinary and jointly administered by the College of Agriculture and Life Sciences and the Mays Business School. This professional curriculum is designed to provide a broad preparation for economic, financial and marketing analysis of agribusiness, food and fiber industry decisions.

The PhD program (p. 158) concentrates on the theory, quantitative tools and methodology required of the professional applied economist. Field areas offered within the PhD program include: Markets and Information Economics, Resource and Environmental Economics and Policy and Trade. A PhD in Agribusiness and Managerial Economics (p. 60) is also offered by the Intercollegiate Faculty of Agribusiness. No foreign language is required for students pursuing any of our PhD programs. For more information about program requirements and employment opportunities, contact the department's graduate office.

Faculty

Anderson, David, Visiting Professor
 Agricultural Economics
 PHD, Texas A&M University, 1994

Boadu, Frederick O, Professor
 Agricultural Economics
 PHD, University of Kentucky, 1981

Harness, Nathaniel J, Instructional Associate Professor
 Agricultural Economics
 PHD, Texas Tech University, 2007

Ishdorj, Ariun, Associate Professor
Agricultural Economics
PHD, Iowa State University, 2008

Kibriya, Shahriar, Visiting Lecturer
Agricultural Economics
PHD, Texas A & M University, 2011

Leatham, David J, Professor
Agricultural Economics
PHD, Perdue University, 1983

Litzenberg, Kerry K, Sr. Professor
Agricultural Economics
PHD, Purdue University, 1979

McCarl, Bruce A, Distinguished Professor
Agricultural Economics
PHD, The Pennsylvania State University, 1973

Mjelde, James W, Professor
Agricultural Economics
PHD, University of Illinois at Urbana - Champaign, 1985

Ng, Desmond W, Associate Professor
Agricultural Economics
PHD, University of Illinois at Urbana-Champaign, 2001

Outlaw, Joe, Visting Professor
Agricultural Economics
PHD, Texas A&M University, 1992

Penson Jr, John B, Sr. Professor
Agricultural Economics
PHD, University of Illinois at Urbana-Champaign, 1973

Price, Edwin C, Professor
Agricultural Economics
PHD, University of Kentucky, 1973

Rister, M E, Professor
Agricultural Economics
PHD, Michigan State University, 1981

Rosson, Claude, Sr. Professor
Agricultural Economics
PHD, Texas A&M University, 1982

Salin, Victoria S, Professor
Agricultural Economics
PHD, Purdue University, 1996

Senarath Dharmasena, Kalu A, Instructional Assistant Professor
Agricultural Economics
PHD, Texas A&M University, 2010

Shaw, William D, Professor
Agricultural Economics
PHD, University of Colorado, 1985

Shcherbakova, Anastasia V, Assistant Professor
Agricultural Economics
PHD, The University of Chicago, 2010

Springfield III, Henry C, Professor of Practice
Agricultural Economics
PHD, Texas A&M University, 2008

Stevens, Reid, Assistant Professor
Agricultural Economics
PHD, University of California - Berkeley, 2015

Vedenov, Dmitry, Associate Professor
Agricultural Economics
PHD, Ohio State University, 2001

Williams, Gary W, Professor
Agricultural Economics
PHD, Purdue University, 1981

Woodward, Richard T, Professor
Agricultural Economics
PHD, University of Wisconsin, 1997

Wu, Ximing, Professor
Agricultural Economics
PHD, University of California, Berkeley, 2003

Zhang, Yu, Associate Professor
Agricultural Economics
PHD, Texas A&M University, 2010

Masters

- Master of Agriculture in Agricultural Economics (p. 151)
- Master of Science in Agricultural Economics (p. 154)

Doctoral

- Doctor of Philosophy in Agricultural Economics (p. 158)

Master of Agriculture in Agricultural Economics

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 152)
- Degree Plan (p. 152)
- Credit Requirement (p. 152)
- Transfer of Credit (p. 152)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 153)
- Final Examination (p. 153)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible

for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 154)
- Time Limit (p. 154)
- Foreign Languages (p. 154)
- Application for Degree (p. 154)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Agricultural Economics

A Master of Science degree in Agricultural Economics provides professional training for students seeking the skills in management, finance, real estate, entrepreneurship, marketing, policy analysis, and decision-making needed in today's business world with a focus on the food and fiber industry. Master of Science students may choose between the thesis option and the non-thesis option.

Information regarding the program and application process (<http://admissions.tamu.edu/graduate/apply>) may be obtained from the AGECE Graduate Website (<http://aglifesciences.tamu.edu/agecograds>) (click on "Prospective Students") or by contacting the Department (AE-Gradoffice@agecon.tamu.edu).

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 155)
- Degree Plan (p. 155)
- Credit Requirements (p. 156)
- Transfer of Credit (p. 156)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 156)
- Thesis Option (p. 156)
 - Thesis Proposal (p. 157)
 - Final Examination/Thesis Defense (p. 157)
- Non-Thesis Option (p. 157)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional

Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the “Office of Graduate and Professional Studies Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student’s GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master’s degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student’s advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student’s advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student’s major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 158)
- Continuous Registration (p. 158)
- Time Limit (p. 158)
- Foreign Languages (p. 158)
- Application for Degree (p. 158)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Agricultural Economics

A Ph.D. in Agricultural Economics provides a degree tailored to produce highly skilled applied economist focused on quantitatively-based economic research and analyses of managerial and policy questions as well as natural resource and environmental issues.

Students (regardless of their primary interests) are encouraged to take not only advanced courses covering various fields within the department but also essential supporting courses in other departments. Students are expected to acquire knowledge of economic theory, its application to contemporary agricultural production, agribusiness and resource problems, and the ability to employ analytical techniques in making policy and business decisions.

The teaching and research activities are grouped broadly as follows: agribusiness management and finance, production economics, markets and trade, policy analysis, and resource economics. The present and expanding program of research in the department affords the student a wide choice and capable guidance in dissertation research.

Information regarding the program and application process (<http://admissions.tamu.edu/graduate/apply>) may be obtained from the AGECE graduate website (<http://aglifesciences.tamu.edu/agecograds>) (click on "Prospective Student") or by contacting the Department (AE-Gradoffice@agecon.tamu.edu).

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 160)
- Degree Plan (p. 160)
- Transfer of Credit (p. 160)
- Research Proposal (p. 161)
- Examinations (p. 161)
 - Preliminary Examination (p. 161)
 - Preliminary Examination Format (p. 161)
 - Preliminary Examination Scheduling (p. 161)

- Report of Preliminary Examination (p. 162)
- Retake of Failed Preliminary Examination (p. 162)
- Final Examination (p. 162)
- Report of Final Examination (p. 162)
- Dissertation (p. 163)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 163)
- Time Limit (p. 163)
- Continuous Registration (p. 163)
- Admission to Candidacy (p. 163)
- Languages (p. 164)
- 99-Hour Cap on Doctoral Degree (p. 164)
- Application for Degree (p. 164)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Agricultural Leadership, Education, and Communications

<http://alec.tamu.edu>

Head: S. Shafer

Associate Head for Graduate Programs: R. Strong

Graduate Program Coordinator: Clarice Fulton

The Department of Agricultural Leadership, Education, and Communications offers graduate studies leading to the degrees of: Master of Agriculture in agricultural development, an online or campus program, Master of Education, Master of Science, and Doctor of Philosophy in agricultural leadership, education, and communications. A Doctor of Education in agricultural education is offered on campus and at a distance through a joint program with Texas Tech University.

Professionals completing these degrees work in a variety of contextual settings including agricultural communications/journalism, technology-enhanced learning, organizational and community leadership, extension education, teacher education, and international agricultural development.

Graduate students, in consultation with a graduate advisor, select areas of emphasis. Examples include agricultural communications, extension education, international agricultural development, leadership education theory and applications, instructional design and delivery, and teacher education.

Departmental faculty members maintain contact with professionals in their field. These contacts enable faculty members to teach and direct research in support of graduate programs with a current appreciation of the important and complex problems encountered by professional practitioners.

For additional information about the graduate faculty and programs available in the department, contact the graduate program coordinator by email (cfulton@tamu.edu) or visit the website at <http://alec.tamu.edu>.

Degree Programs

The Department of Agricultural Leadership, Education and Communications at Texas A&M University is by far the largest program of its kind, and has been ranked as the second most distinguished program in agricultural education in the United States. Faculty members in the Department provide leadership to national and international organizations within the discipline. Graduate faculty members in the Department cluster into learning communities based primarily on the settings where we work. Students will benefit from the faculty members' different professional interests, perspectives, and knowledge, and learn from their experience in the classroom.

Master's Programs

Three Master's degree programs are available in the department for individuals interested in career areas such as a public relations account manager, communications coordinator, agricultural science teacher, sales representative, county extension agent, leadership consultant, social and public service, instructional designer, and international development specialist. Because of the diverse nature of these careers, degree plans will vary considerably and are generally unique for each individual. Your specific degree plan is developed through consultation with your graduate committee.

Master of Science (Thesis option)

The Master of Science, with thesis, requires a minimum of 32 semester-hours of coursework. The degree plan consists of at least 32 credit hours, typically, 20 hours will be taken in the department, 3-4 of these hours will be credited for the thesis, and a maximum of 12 hours of coursework may be in supporting field(s) of interest.

Coursework in the supporting fields in the MS-Thesis program may be in any academic area that contributes to a student's career objectives. Examples include agricultural leadership, agricultural communications, change management, extension education, international agricultural development, research methods and sociology.

Master of Science (Non-Thesis option)

Students whose career objectives are concerned with formal or informal education in agriculture may seek the Master of Science-Non-Thesis option: e.g., teaching agricultural sciences, working as an Extension educator, in leadership fields, in training and development or international agricultural development. The 36 semester-hours of coursework consist typically of 18 to 24 semester hours in the department and a maximum of 12 hours of coursework may be completed in support areas.

Master of Education

Students whose career objectives include working in formal or informal education setting in agriculture seek the Master of Education: e.g., teaching agricultural sciences in a high school, working as an Extension educator, corporate training and development. The 36 semester credit hour program typically includes 18 to 24 hours in the department and one or more support areas.

Master of Agriculture (Distance Education only)

Students pursuing careers in fields such as instructional design, international agricultural development, agricultural leadership or rural community development might seek the Master of Agriculture in Agricultural Development. The program prepares individuals for leadership roles in education, instructional design, cooperative extension service, and many other professional careers in agriculture and life sciences. The program is completed as distance education. This is a non-thesis degree program that emphasizes the development of problem-solving skills involved in applying science and technology to benefit humanity.

This 36 semester credit hour program includes development of a professional paper and to demonstrate problem solving capabilities, a professional internship may be completed to provide meaningful, applied, and practical experience. The internship is a unique feature of the M.Ag program completed at the end of formal coursework, and involves either paid or un-paid employment in your area of interest. Planned in concert

by the student, university adviser and business supervisor, the internship normally lasts from three to six months.

Doctoral Programs

The Department offers three doctoral programs described below:

Doctor of Philosophy (PhD)

The Doctor of Philosophy is a specialized, research-oriented degree. Coursework gives the candidate a thorough and comprehensive knowledge in the field of study and methods of research. The program requires a minimum of 64 semester credit hours, including dissertation research, beyond the master's degree. Without the master's degree, the program would include a minimum of 96 semester credit hours. The program prepares individuals for university faculty positions, public and corporate leadership roles in education, natural resource management, extension education, international development, and many other professional careers in agriculture and life sciences. Ordinarily, students pursuing the PhD choose supporting coursework closely aligned to their research interests and professional goals.

Doctor of Education (EdD)

The Doctor of Education is a campus-based professional degree designed to prepare a candidate for a position of leadership in the full range of educational settings, including public and private schools and colleges, business, government, industry, and international organizations. The program is designed for the practitioner; a graduate may be expected to fill instructional, supervisory, administrative, and policy positions in agricultural, educational, and corporate settings. Although substantively different from the PhD, the EdD requires equivalent admission qualifications, standards of scholarship and breadth and depth of study. A record of study and an internship are completed in this 64 semester credit hour program.

Joint Doctor of Education in Agricultural Education (Doc@Distance)

We are currently not recruiting or admitting for this program.

The Joint EdD in agricultural education is delivered at a distance with the Department of Agricultural Education and Communications at Texas Tech University. The program is designed for mid-career professionals.

Students enter as members of a cohort, and advance together through the program over four years. Program graduates are providing leadership and direction a variety of instructional, supervisory, and administrative positions across the education and training professions. Admission review takes place every two years with a new cohort beginning every odd fall semester. The admission process is different than our other degree programs. If you are interested in this program, contact the graduate program coordinator by email (cfulton@tamu.edu) or visit the website <http://alec.tamu.edu/academics/distance-education/joint-edd-program/>.

Entering doctoral studies is a long term commitment on the part of the student and the department. Individuals interested in the doctoral programs are strongly encouraged to schedule a visit to interview with faculty. If a visit cannot be arranged, applicants are encouraged to prepare a 3-5 minute video sharing general information about yourself, your professional work experience, the area of study you are interested in, and your long-term academic and professional goals.

Certificate Programs

The Department offers four certificate programs which will enable individuals to gain specific knowledge and skillsets: Advanced Pedagogy

in Agriculture, Agriculture eLearning Development, Extension Education, and Leadership, Education, Theory, and Practice. The Advanced Pedagogy, Agriculture eLearning Development, and the Leadership certificates may be obtained at a distance by taking online courses. All departmental certificates may be completed in a degree program, by applying as a certificate option only, or continuing education.

For more information to obtain any of the certificates, please contact the graduate coordinator, Clarice Fulton at cfulton@tamu.edu, or call 979-862-7180.

Certificate in Advanced Pedagogy in Agriculture

A Certificate in Advanced Pedagogy in Agriculture is designed for graduate students to continue their education and develop professionally in pedagogy principles and delivery. This program is offered completely online, however some courses are also offered face to face. It provides flexibility for students to take courses in the manner that best fits their schedule. This certificate is appropriate for teachers, advisors, coaches, coordinators, and others who want to develop more advanced skills in working with youth in agriculture and related settings. Students are required to complete five courses (14 credit hours) to earn the certificate.

Certificate in Agriculture eLearning Development

The Agriculture eLearning Development certificate is an innovative program that prepares students and professionals to develop sophisticated eLearning courses and programs to serve the eTraining needs of both public and private sectors of agriculture. Students are required to complete five online courses (14 credit hours) to earn the certificate.

Certificate in Extension Education

A Certificate in Extension Education is an innovative program that prepares students with the unique knowledge and skills required to apply Extension education theory and put into practice these theories at any level in an organization. Students will gain a substantive foundation of Extension education theory, with the instructional focus on community situations and how to apply theories to all community situations. Students are required to complete five courses (14 credit hours) to earn the certificate.

Certificate in Leadership Education, Theory, and Practice

The Leadership Education, Theory, and Practice Certificate will prepare students with the unique knowledge and skills required to apply leadership theory and put into practice these theories at any level in an organization. Students gain a substantive foundation of leadership theory, with the institutional focus on leadership situations and how to apply leadership theories to all professional organizations, including professional and civic. This emphasis consists of 12 credit hours.

Faculty

Archer, Holli R, Assistant Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2013

Boyd, Barry L, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1991

Briers, Gary E, Professor
Ag Leadership, Educ & Comm
PHD, Iowa State University, 1978

Dooley, Kim E, Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1995

Dunn, Allison L, Assistant Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2018

Dunsford, Deborah W, Senior Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1993

Elbert, Chanda D, Associate Professor
Ag Leadership, Educ & Comm
PHD, The Pennsylvania State University, 2000

Elliot, John F, Professor
Ag Leadership, Educ & Comm
PHD, Ohio State University, 1988

Felton Odom, Summer R, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2011

Harlin, Julie F, Associate Professor
Ag Leadership, Educ & Comm
PHD, Oklahoma State University, 1999

Lockett, Landry L, Assistant Lecturer
Ag Leadership, Educ & Comm
EDD, Texas A&M University, 2007

McCubbins, Andrew, Assistant Professor
Ag Leadership, Educ & Comm
PHD, Iowa State University, 2016

McKim, Billy R, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2010

Moore, Lori L, Associate Professor
Ag Leadership, Educ & Comm
PHD, University of Florida, 2003

Murphrey, Theresa P, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1997

Murphy, Timothy H, Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1995

Pina Jr, Manuel, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1978

Preston, Tammie M, Assistant Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2014

Redwine, Tobin D, Instructional Assistant Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2014

Rutherford, Tracy A, Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1998

Strong Jr, Robert L, Associate Professor
Ag Leadership, Educ & Comm
PHD, University of Florida, 2010

Strong, Jennifer R, Associate Professor
Ag Leadership, Educ & Comm
PHD, Oklahoma State University, 2007

Wingenbach, Gary J, Professor
Ag Leadership, Educ & Comm
PHD, Iowa State University, 1995

Zent, Rodney L, Assistant Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1981

Masters

- Master of Agriculture in Agricultural Development (p. 167)
- Master of Education in Agricultural Leadership, Education, and Communication (p. 176)
- Master of Science in Agricultural Leadership, Education, and Communication (p. 178)

Doctoral

- Doctor of Education in Agricultural Education (p. 170)
- Doctor of Philosophy in Agricultural Leadership, Education, and Communications (p. 182)

Certificates

The Department offers four certificate programs which will enable individuals to gain specific knowledge and skillsets: Advanced Pedagogy in Agriculture, Agriculture eLearning Development, Extension Education, and Leadership, Education, Theory, and Practice. The Advanced Pedagogy, eLearning Development, and the Leadership certificates may be obtained at a distance by taking online courses. All certificates may be completed in a degree program or by applying as a certificate option only.

- Advanced Pedagogy in Agriculture Certificate (p. 188)
- Agriculture eLearning Development Certificate (p. 189)
- Extension Education Certificate (p. 189)
- International Agriculture Certificate (p. 189)
- Leadership Education, Theory, and Practice Certificate (p. 191)

Cost to Complete a Certificate

All certificates offered by the department may be completed in a degree program or certificate only status as academic credit (active enrollment at Texas A&M University) or by Continuing Education. Cost for academic credit is based on Texas A&M University tuition and fees. Cost for continuing education credit is currently \$525/course and may be subject to change. In both cases, these costs do not include expenses related to required software or textbooks. A certificate completed through

continuing education will not be listed on a university transcript, and many people prefer 'transcripted' certificate programs.

If an individual is not currently enrolled at Texas A&M University, completion of the certificate courses and "transcripted" completion on a university transcript is obtained by enrolling at Texas A&M University by submitting an certificate application through Apply Texas. If accepted, students will complete the courses for academic credit.

For more information about completing a transcripted certificate program or a non-transcripted certificate through Continuing Education, please contact the graduate coordinator, Clarice Fulton by email, cfulton@tamu.edu, or phone 979-862-7180.

Master of Agriculture in Agricultural Development

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 167)
- Degree Plan (p. 168)
- Credit Requirement (p. 168)
- Transfer of Credit (p. 168)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 168)
- Final Examination (p. 169)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least**

one or more of the members must have an appointment to a department other than the student's major department.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any**

course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 169)
- Time Limit (p. 170)
- Foreign Languages (p. 170)
- Application for Degree (p. 170)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Education in Agricultural Education

On-Campus Degree Program

The **Doctor of Education (EdD)** campus degree in agricultural education is a professional degree designed to prepare a candidate for a position of leadership in the full range of educational settings, including public and private schools and colleges, business, government, industry and the military establishment. The program is designed for the practitioner; a graduate may be expected to fill instructional, supervisory and administrative positions in which educational services are to be rendered.

Although substantively different from the PhD degree in education, the EdD degree requires equivalent admission qualifications, standards of scholarship and breadth and depth of study. Because graduates of the program are expected to demonstrate a high level of professional skill and educational statesmanship, only those candidates who show a consistently high level of professional performance in their academic studies, in their role-related studies, in their internship experience, and in the completion of their records of study will be recommended for the degree. The EdD degree may be earned in agricultural education, educational administration, and curriculum and instruction. Details of the requirements are presented below.

Distance Education Degree Program

Joint Doctor of Education in Agricultural Education (Doc@Distance)

We are currently not recruiting or admitting for this program.

The Joint EdD in agricultural education delivered at a distance is offered as a joint program with the Department of Agricultural Education and Communications at Texas Tech University. Mid-career professionals enter as members of a cohort and advance through the program over four years.

Students admitted to this program will be required to complete a specific course curriculum consisting of courses selected at Texas A&M University and Texas Tech University. A record of study is completed in this 64 semester-hour program.

For more specific information on this unique distance delivery program, visit the departmental web page at <http://alec.tamu.edu>.

Admission

On-Campus Degree Program

An applicant must hold the master's degree, provide an academic record acceptable to the department, and may be required to submit scores for the Graduate Record Examination. The requirement for years of professional experience in an educationally related setting varies by program. Please see program admissions information related to this prerequisite. He/she also must complete a written instrument which assesses the knowledge of the requirements and duties of the professional roles to which he/she aspire and demonstrates his/her ability to write with clarity, organization and correctness.

Distance Education Degree Program

We are currently are not recruiting or admitting for this program. An applicant must hold the master's degree, provide an academic record acceptable to the department, and may be required to submit scores for the Graduate Record Examination. He/she also must complete a written instrument which assesses the knowledge of the requirements and duties of the professional roles to which he/she aspire and demonstrates his/her ability to write with clarity, organization and correctness.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 171)
- Degree Plan (p. 171)
- Transfer of Credit (p. 172)
- Examinations (p. 172)
 - Preliminary Examination (p. 172)
 - Preliminary Examination Format (p. 172)
 - Preliminary Examination Scheduling (p. 173)
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 - Final Examination (p. 174)
 - Report of Final Examination (p. 174)
- Record of Study (p. 174)

Student's Advisory Committee

On-Campus Degree Program

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Distance Education Degree Program

After receiving admission to graduate studies and enrolling, the student will consult with the department concerning appointment of the co-chairs of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where a co-chair is from each institution. The co-chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty

members located on Texas A&M University and Texas Tech University campuses may serve as co-chair of a student's advisory committee. Other Texas A&M University and Texas Tech University graduate faculty members may serve as members.

If a co-chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the co-chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of co-chair of a student's advisory committee without a second co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The co-chairs of the committee, who usually have immediate supervision of the student's research and dissertation or record of study, have the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

On-Campus Degree Program

Each student's proposed degree plan will be individually designed on the basis of the student's career objectives and the competencies associated with the professional role to which the student aspires. It will contain a minimum of 64 semester hours, including the following components:

1. At least 3 semester hours of seminars stressing the foundation concepts with which every EdD student should be familiar;
2. A set of courses selected to prepare the candidate for a specific professional role within a field of specialization;
3. One or more courses that develop basic understanding of the procedures and applications of research;
4. At least one supporting field of 12 or more semester hours or two supporting fields of 9 or more semester hours each;
5. A professional internship of at least 6 semester hours related to the professional role to which the student aspires;
6. A record of study involving at least 12 semester hours of credit.

No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more

than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Distance Education Degree Program

Each student's proposed degree plan will be individually designed on the basis of the student's career objectives and the competencies associated with the professional role to which the student aspires. It will contain a minimum of 64 semester hours, including the following components:

1. At least 6 semester hours of seminars stressing the foundation concepts with which every EdD student should be familiar;
2. A set of courses selected to prepare the candidate for a specific professional role within a field of specialization;
3. One or more courses that develop basic understanding of the procedures and applications of research;
4. At least one supporting field of 12 or more semester hours or two supporting fields of 9 or more semester hours each;
5. A professional internship of at least 6 semester hours related to the professional role to which the student aspires;
6. A record of study involving at least 12 semester hours of credit.

No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the preliminary examination.

Transfer of Credit

On-Campus and Distance Education Degree Programs

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved joint degree programs with other Texas A&M University System institutions, credit for theses or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable **coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the

registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Examinations

Qualifying Examination

Distance Education Degree Program

Each EdD degree candidate is required to take a departmentally prepared written qualifying examination at completion of at least 30 credit hours of doctoral work. The qualifying examination will include knowledge-level questions to assess your ability to recall, describe, and discuss the fundamental concepts in each of your courses. Continuation in the program and/or additional required study is dependent on the results of this qualifying examination. A student who has failed the qualifying examination may be given one re-examination between one and six months after the first attempt. Options for utilizing the credit earned may be discussed with the student's advisory committee.

In addition, each candidate must successfully complete an oral and written preliminary examination prior to admission to candidacy and a final oral examination upon completion of the record of study. Both of these requirements will conform to the requirements for the PhD preliminary examination and final examination.

Preliminary Examination for Doctoral Students

On-Campus and Distance Education Degree Programs

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

On-Campus and Distance Education Degree Programs

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

On-Campus and Distance Education Degree Programs

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.

- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

On-Campus and Distance Education Degree Programs

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

On-Campus and Distance Education Degree Programs

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retake, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retake. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

On-Campus and Distance Education Degree Programs

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

On-Campus and Distance Education Degree Programs

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Record of Study

On-Campus and Distance Education Degree Programs

The EdD student will produce a major research document called a record of study. The research project may involve such topics as

1. a field study on a problem of major proportions in time or extent;
2. a curriculum development project validated through pilot and field testing; or
3. action research on a curricular, instructional, supervisory or administrative problem based on empirical data.

The EdD student must have primary responsibility for the design and development of the research, and the record of study must be the sole and original work of the candidate.

Whatever the nature of the research project undertaken by the candidate, he or she will be required to prepare a record of study that explains and supports the activities undertaken in the project and supports its conclusions with adequate investigations, empirical data and a comprehensive bibliography. Procedures used in the student's research will be described in sufficient detail for educators in other locations to apply or extend the procedures. All records of study should be characterized by accuracy of observation and measurements, thoroughness of analysis and synthesis, and accuracy and completeness of presentation.

Guidelines for the preparation of the record of study are available in the *Thesis Manual* which is available online at <http://ogaps.tamu.edu>. After successful defense and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her record of study in electronic format as a single PDF file. The PDF file must be uploaded to the website <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

Distance Education students will subsequently submit his/her record of study in electronic format as a single PDF file to Texas Tech University.

A record of study that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 175)
- Continuous Registration (p. 175)
- Internship or Practicum (p. 175)
- 99-Hour Cap on Doctoral Degrees (p. 175)
- Application for Degree (p. 176)

Residence

On-Campus Degree Program

The residence requirement for the EdD degree is 30 semester credit hours in resident study at Texas A&M University. Of these 30 semester hours, at least 18 must be taken as a full-time student. The residence requirement must be fulfilled within five consecutive calendar years. This requirement may be satisfied by a student who presents any combination of full-time study during summer sessions of at least five weeks duration and/or work as a full-time student during regular sessions which totals in the aggregate at least 18 semester hours, accomplished within a five-year period beginning with the first course proposed to apply to this requirement.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in a program leading to the EdD who has completed all coursework on his/her degree plan other than 692 (Professional Study) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Internship or Practicum

On-Campus and Distance Education Degree Programs

Each EdD degree candidate will complete a university-directed internship in a professional employment setting with a minimum duration of 300 clock hours accrued at the rate of 10–40 hours per week. The internship will require of the student full participation and responsibility in experiences directly related to the student's career specialization. Credit for the internship will not be given for a continuation of regular employment activities (e.g., continuing to serve as a junior college

teacher or as an elementary school principal), but only for completing an entirely new work experience. The internship may be on a paid or unpaid basis, must be undertaken after the student has a degree plan on file, and must be supported by prior or concurrent coursework (usually toward the end of the degree program). Prior to its beginning, the internship must be approved in writing as to details by all members of the student's doctoral committee. At the conclusion of the internship, a formal written summary of its nature and results must be approved by the student's advisory committee.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Education in Agricultural Leadership, Education, and Communication

A graduate student majoring in agricultural leadership, education and communication; bilingual education; educational administration; educational curriculum and instruction; educational psychology; educational technology; or special education may become a candidate for the degree of **Master of Education (MEd)**. This is a non-thesis degree which requires a minimum of 36 hours of coursework and a satisfactory comprehensive final examination.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 176)
- Degree Plan (p. 176)
- Credit Requirement (p. 176)
- Transfer of Credit (p. 176)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 177)
- Final Examination (p. 177)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must be from a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department

Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the

limitations stated in the preceding section apply. Coursework in which **no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F, or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A Master of Education student in the Department of Educational Psychology or a student majoring in Curriculum and Instruction is eligible to petition for an exemption from the final examination with departmental and committee approval. The petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. See the Office of Graduate and Professional Studies website <http://ogaps.tamu.edu>.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 178)
- Time Limit (p. 178)
- Foreign Languages (p. 178)
- Internship or Practicum (p. 178)
- Application for Degree (p. 178)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Education degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Agricultural Leadership, Education, and Communication

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 179)
- Degree Plan (p. 179)
- Credit Requirements (p. 180)
- Transfer of Credit (p. 180)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 180)
- Thesis Option (p. 180)
 - Thesis Proposal (p. 181)
 - Final Examination/Thesis Defense (p. 181)
- Non-Thesis Option (p. 181)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department

(or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines

for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to

published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 182)
- Continuous Registration (p. 182)
- Time Limit (p. 182)
- Foreign Languages (p. 182)
- Application for Degree (p. 182)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven

calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Agricultural Leadership, Education, and Communication

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | | | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 184) • Degree Plan (p. 184) • Transfer of Credit (p. 184) • Research Proposal (p. 185) • Examinations (p. 185) <ul style="list-style-type: none"> • Preliminary Examination (p. 185) • Preliminary Examination Format (p. 185) • Preliminary Examination Scheduling (p. 185) • Report of Preliminary Examination (p. 186) • Retake of Failed Preliminary Examination (p. 186) • Final Examination (p. 186) • Report of Final Examination (p. 186) • Dissertation (p. 187) | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 187)
- Time Limit (p. 187)
- Continuous Registration (p. 187)
- Admission to Candidacy (p. 187)
- Languages (p. 188)
- 99-Hour Cap on Doctoral Degree (p. 188)
- Application for Degree (p. 188)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Advanced Pedagogy in Agriculture - Certificate

A Certificate in Advanced Pedagogy in Agriculture is designed for graduate students to continue their education and develop professionally in pedagogy principles and delivery. This program is offered completely online, however some courses are also offered face to face. It provides flexibility for students to take courses in the manner that best fits their schedule. This certificate is appropriate for teachers, advisors, coaches, coordinators, and others who want to develop more advanced skills in working with youth in agriculture and related settings. Students are required to complete five courses (14 credit hours) to earn the certificate.

The program includes a capstone experience to solidify skills and enhance the graduate experience. The capstone experience will be tailored to individual student needs in consultation with the committee chair, graduate committee and certificate committee. Examples of appropriate activities include, but are not limited to: development and documentation of a program, collection and dissemination of data that impacts practices, shadowing experiences or field trips to other programs documented and shared. It is expected that the results of the capstone will be shared with a larger audience (presentation at an in-service, professional development presentation, area, state or national conference, or other appropriate venue).

Students may complete this certificate as part of a degree program, as a certificate option only, or as continuing education. When completed as part of a degree program or as a certificate option only, the certificate completion will appear on the transcript.

For more information about the Advanced Pedagogy Certificate, contact the graduate coordinator, Clarice Fulton, cfulton@tamu.edu or call 979-862-7180.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|---------------------------------------------------------|-----------------------|
| ALEC 601 | Advanced Methods in Agricultural Education | 3 |
| or ALEC 611 | or Advanced Methods in Distance Education | |
| ALEC 607 | Youth Leadership Programs | 3 |
| ALEC 623 | Survey of Evaluation Strategies for Agriculture | 3 |
| or ALEC 625 | or Program Evaluation and Organizational Accountability | |
| ALEC 630 | Guidance and Counseling for Rural Youth | 3 |
| ALEC 685 | Directed Studies ¹ | 1-4 |
| Total Semester Credit Hours | | 14 |

¹ Only 2 credit hours will apply for ALEC 685.

Agriculture eLearning Development - Certificate

The Agriculture eLearning Development Certificate is an innovative program that prepares students across the College of Agriculture and Life Sciences with the unique knowledge and skills required to develop sophisticated eLearning courses and training programs for their Ag disciplines. Students will gain a substantive foundation of learning theory, adult education, instructional design, and computer programming from an eLearning perspective. Students are required to complete five online courses (14 credit hours) to earn the certificate.

The program includes a capstone experience to solidify skills and enhance the graduate experience. The capstone experience will be tailored to individual student needs in consultation with a member of the certificate committee. Examples of appropriate activities include, but are not limited to: development of a web page, development and delivery of online courses, or course design for training programs and/or learning units.

Students may complete this certificate as part of a degree program, as a certificate option only, or as continuing education. When completed as part of a degree program or as a certificate option only, the certificate completion will appear on the transcript.

For more information about the eLearning certificate, contact the graduate coordinator, Clarice Fulton by email, cfulton@tamu.edu, or phone 979-862-7180.

Program Requirements

Inquiries should be addressed to the department's graduate coordinator (p. 164).

| Code | Title | Semester Credit Hours |
|-----------------------------|---------------------------------------------------|-----------------------|
| ALEC 610 | Principles of Adult Education | 3 |
| ALEC 611 | Advanced Methods in Distance Education | 3 |
| ALEC 612 | Advanced Instructional Design for Online Learning | 3 |
| ALEC 613 | Techniques in eLearning Development and Delivery | 3 |
| ALEC 685 | Directed Studies | 2 |
| Total Semester Credit Hours | | 14 |

Extension Education - Certificate

A Certificate in Extension Education is an innovative program that prepares students with the unique knowledge and skills required to apply Extension education theory and put into practice these theories at any level in an organization. Students will gain a substantive foundation of Extension education theory, with the instructional focus on community situations and how to apply theories to all community situations. Students are required to complete five courses (14 credit hours) to earn the certificate.

The program includes a capstone experience to solidify skills and enhance the graduate experience. The Capstone Experience will be

tailored to individual student needs in consultation with the committee chair, graduate committee, and certificate committee. Examples of appropriate activities include, but are not limited to the development of an educational program to address a critical issue or need within Extension, development of a new innovation or strategic initiative for Extension, or any other effort that would enhance the student experience while being important to Extension.

Students may complete this certificate as part of a degree program, as a certificate option only, or as continuing education. When completed as part of a degree program or as a certificate option only, the certificate completion will appear on the transcript.

For more information to obtain the Extension Education Certificate, please contact the graduate coordinator, Clarice Fulton at cfulton@tamu.edu, or call 979-862-7180.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|-------------------------------------------------------------------|-----------------------|
| ALEC 610 | Principles of Adult Education | 3 |
| ALEC 623 | Survey of Evaluation Strategies for Agriculture ¹ | 3 |
| or ALEC 625 | or Program Evaluation and Organizational Accountability | |
| ALEC 631 | Development and Planning of Community Education Programs | 3 |
| ALEC 685 | Directed Studies ² | 1-4 |
| Select one of the following: | | 3 |
| ALEC 603 | Experiential Learning | |
| ALEC 608 | Leadership of Volunteers | |
| ALEC 609 | Learning Organizations | |
| ALEC 623 | Survey of Evaluation Strategies for Agriculture ¹ | |
| ALEC 625 | Program Evaluation and Organizational Accountability ¹ | |
| ALEC 630 | Guidance and Counseling for Rural Youth | |
| ALEC 640 | Methods of Technological Change | |
| Total Semester Credit Hours | | 14 |

¹ Courses may not count in more than one category.

² Only 2 credit hours will apply for ALEC 685.

International Agriculture - Certificate

The International Agriculture Certificate Program is a transcribed certificate program provided through the Department of Agricultural Leadership, Education and Communications. Its purpose is to expand the background and knowledge of graduate students seeking careers in international agriculture, natural resource management and related fields.

The certificate is going through course selection revisions and will be modified for the 2020-2012 undergraduate catalog. If you have interest in obtaining this certificate, visit our website at <https://alec.tamu.edu/academics/certificates/> or contact the Department of Agricultural Leadership, Education, and Communications graduate program coordinator, Clarice Fulton, cfulton@tamu.edu.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------|
| ALEC/AGEC elective ¹ | | |
| Select two of the following: | | 6 |
| AGEC 604/ PSAA 663 | Natural Resource Economics | |
| AGEC 608 | Economics of Foreign Intervention, Conflict, and Development | |
| AGEC 614 | Global Food and Agribusiness Policy | |
| AGEC 639/ SCSC 635 | Comparative Global Standards in Food Systems | |
| AGEC 652 | International Agribusiness Trade Analysis | |
| AGEC 659 | Ecological Economics | |
| ALEC 610 | Principles of Adult Education | |
| ALEC 640 | Methods of Technological Change | |
| ALEC 644 | The Agricultural Advisor in Developing Nations | |
| ALEC 645 | Initiating, Managing and Monitoring Projects of International Agricultural Development | |
| ALEC 646 | Institutions Serving Agriculture in Developing Nations | |
| Supporting area elective ² | | |
| Select two of the following: | | 6 |
| AGEC 604/ PSAA 663 | Natural Resource Economics ² | |
| AGEC 608 | Economics of Foreign Intervention, Conflict, and Development ² | |
| AGEC 614 | Global Food and Agribusiness Policy ² | |
| AGEC 639/ SCSC 635 | Comparative Global Standards in Food Systems ² | |
| AGEC 652 | International Agribusiness Trade Analysis ² | |
| AGEC 659 | Ecological Economics ² | |
| ALEC 610 | Principles of Adult Education ² | |
| ALEC 640 | Methods of Technological Change ² | |
| ALEC 644 | The Agricultural Advisor in Developing Nations ² | |
| ALEC 645 | Initiating, Managing and Monitoring Projects of International Agricultural Development ² | |
| ALEC 646 | Institutions Serving Agriculture in Developing Nations ² | |
| ANSC 610 | Applied Animal Ethology | |
| ANSC 628 | Animal Breeding | |
| ANSC 637 | Food Safety: Policy, Regulations and Issues | |
| ANSC 657/ NFSC 657 | Hazard Analysis and Critical Control Point System | |
| ANSC 667/ NFSC 667 | Industrial Processed Meat Operations | |

| | | |
|------------------------------|-------------------------------------------------------------------------|--------------|
| DASC 606/ NFSC 606 | Microbiology of Foods | |
| ENTO 618 | Medical and Veterinary Entomology | |
| ENTO 625/ GEOG 625 | Landscape Ecology | |
| ESSM 600 | Principles of Ecosystem Science and Management | |
| ESSM 622 | Biogeochemistry of Terrestrial Ecosystems | |
| ESSM 624 | Terrestrial Ecosystems and Global Change | |
| ESSM 676/ RENH 650 | Leadership, Development and Management of Environmental NGOs | |
| INTA 608 | Fundamentals of the Global Economy | |
| INTA 616 | Economic Development in China | |
| INTA 625 | International Trade Policy Analysis | |
| INTA 630 | International Economic Development | |
| PSAA 603 | Nongovernmental Organization Management in International Settings | |
| PSAA 636 | Grant and Project Management in the Public and Nonprofit Sectors | |
| PSAA 674 | Political Economy of International Development | |
| RPTS 646 | Heritage Tourism | |
| SCSC 613 | Ethical Aspects of International Agricultural Systems | |
| SCSC 620 | Brazilian Agriculture and Food Production Systems | |
| SCSC 621 | International Agricultural Research Centers - MX | |
| SCSC 623 | Natural Resources and Agricultural Sustainability in UK | |
| SCSC 645/ HORT 645 | World Agriculture and International Plant Breeding | |
| WFSC 605 | Community Ecology | |
| WFSC 624 | Dynamics of Populations | |
| WFSC 639 | Wildlife Ecotoxicology | |
| Capstone ³ | | |
| Select one of the following: | | 3 |
| AGEC 613 | International Agricultural Development Policy | |
| AGEC 685 | Directed Studies | ⁴ |
| ALEC 685 | Directed Studies | ⁴ |
| Total Semester Credit Hours | | 15 |

¹ Six credit hours may be in ALEC, AGECE, or a combination of both subject areas.

² Courses may not count in more than one category.

³ Credit-bearing capstone experience with an international agriculture focus

⁴ Adviser must approve the directed study plan prior to enrollment.

No more than nine hours from one major may be used to satisfy certificate requirements.

Leadership Education, Theory, and Practice - Certificate

Certificate in Leadership Education, Theory, and Practice is an innovative program that prepares students with the unique knowledge and skills required to apply leadership theory and put into practice these theories at any level in an organization. Students will gain a substantive foundation of leadership theory, with the instructional focus on leadership situations and how to apply leadership theories to all professional organizations, including professional and civic. Students are required to complete four courses (12 credit hours) to earn the certificate.

Students may complete this certificate as part of a degree program, as a certificate option only, or as continuing education. When completed as part of a degree program or as a certificate option only, the certificate completion will appear on the transcript.

For more information to obtain the Leadership Education Certificate, please contact the graduate coordinator, Clarice Fulton by email, cfulton@tamu.edu, or phone 979-862-7180.

Program Requirements

This emphasis area consists of 12 semester hours. Inquiries should be addressed to the department's graduate coordinator.

| Code | Title | Semester Credit Hours |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------|
| ALEC 606 | Foundations of Leadership Theory or ALED 340 or Survey of Leadership Theory | 3 |
| Select three of the following: | | 9 |
| ALEC 607 | Youth Leadership Programs | |
| ALEC 608 | Leadership of Volunteers | |
| ALEC 609 | Learning Organizations | |
| ALEC 616 | Facilitation of Leadership Programs | |
| ALEC 617 | Leadership in Organizational Culture and Ethics | |
| ALEC 623 | Survey of Evaluation Strategies for Agriculture or ALEC 618 or Program Evaluation and Organizational Accountability | |
| ALEC 689 | Special Topics in... | ¹ |
| Total Semester Credit Hours | | 12 |

¹ A new course, ALEC 618 Leadership of Teams, will be created to replace the ALEC 689.

Department of Animal Science

<http://animalscience.tamu.edu/>

Head: Dr. Cliff Lamb

Advanced study in animal science offers preparation for a future in teaching, research, extension, livestock and dairy production, and in industries involving food technology, livestock products and livestock management. Majors offered are:

Animal breeding: MS and PhD

Animal science: MS, MAg and PhD

Equine industry management: MEIM

Food science and technology: MS, MAg and PhD

Genetics: MS and PhD

Nutrition: MS and PhD

Physiology of reproduction: MS and PhD

The animal science subject matter fields are strongly supported by coursework in agricultural economics, biochemistry, biophysics, biology, genetics, statistics, and in veterinary anatomy, microbiology, parasitology, pathology, physiology, pharmacology and public health.

Laboratories available for graduate research include cytogenetics, genomics, food technology, meat science, nutrition, molecular biology and reproductive physiology. The Robert Justus Kleberg, Jr. Animal and Food Science Center provides 39 laboratories for research and graduate training. Special equipment available in these laboratories or in readily accessible facilities, such as at the Computing Services Center, offer a wide array of opportunities for study and research.

Dairy, beef, horse and swine herds and sheep and goat flocks at the main station or at research centers afford opportunities to study various problems in physiology, breeding, management, nutrition and production. The Rosenthal Meat Science and Technology Center, equipped to fabricate and process all meat foods on a semicommercial scale, is available for research problems. Texas A&M AgriLife Research projects in all subject matter fields offer opportunities for graduate students to participate in current research activities.

Support areas such as biochemistry and biophysics, economics, genetics and statistics may be readily arranged. Food science and technology and nutrition courses are jointly listed.

There is no specific foreign language requirement for the Doctor of Philosophy degree. A student's advisory committee may require a foreign language or additional coursework in an unrelated area in lieu of a foreign language.

Faculty

Bazer, Fuller W, University Distinguished Professor
Animal Science
PHD, North Carolina State University, 1969

Carstens, Gordon E, Professor
Animal Science
PHD, Colorado State University, 1998

Castillo, Alejandro, Associate Professor
Animal Science
PHD, Texas A&M University, 1998

Cooke, Reinaldo F, Associate Professor
Animal Science
PHD, University of Florida, 2008

Cross, H Russell, Professor
Animal Science
PHD, Texas A&M University, 1972

Daigle, Courtney L, Assistant Professor
Animal Science
PHD, Michigan State University, East Lansing, MI, 2013

De Carvalho Cardoso, Rodolfo, Assistant Professor
Animal Science
PHD, Texas A&M University, 2014
DVM, Sao Paulo State University, 2005

Dunlap, Kathrin A, Assistant Professor
Animal Science
PHD, Texas A&M University, 2006

Forrest, David W, Professor
Animal Science
PHD, University of Wyoming, 1979

Garcia, Leslie L, Instructional Assistant Professor
Animal Science
PHD, Texas A&M University, 2015

Gehring, Kerri B, Professor
Animal Science
PHD, Texas A&M University, 1994

Gill, Clare A, Professor
Animal Science
PHD, University of Adelaide, Australia, 2000

Gill, Jason J, Assistant Professor
Animal Science
PhD, University of Guelph, 2006

Heird, James C, Executive Professor
Animal Science
PHD, Texas Tech University, 1978

Herring, Andy D, Professor
Animal Science
PHD, Texas A&M University, 1994

Ing, Nancy H, Professor
Animal Science
PHD, University of Florida, 1988

Kerth, Christopher R, Associate Professor
Animal Science
PHD, Texas Tech University, 1999

Lamb, Graham C, Professor
Animal Science
PHD, Kansas State University, 1998

Leatherwood, Jessica L, Assistant Professor
Animal Science
PHD, Texas A&M University, 2013

Mies, William L, Visiting Professor
Animal Science
PHD, University of Missouri, 1971

Miller, Rhonda K, Professor
Animal Science
PHD, Colorado State University, 1983

Osburn, Wesley N, Associate Professor
Animal Science
PHD, University of Nebraska–Lincoln, 1996

Paudyal, Sushil, Instructional Assistant Professor
Animal Science
PHD, Colorado State University, 2018

Pohler, Ky Garrett, Assistant Professor
Animal Science
PHD, University of Missouri, 2015

Ramsey, W S, Professor
Animal Science
PHD, New Mexico State University, 1996

Riggs, Penny K, Associate Professor
Animal Science
PHD, Texas A&M University, 1996

Riley, David G, Professor
Animal Science
PHD, Texas A&M University, 2000

Sanders, James O, Professor
Animal Science
PHD, Texas A&M University, 1977

Satterfield, Michael C, Associate Professor
Animal Science
PHD, Texas A&M University, 2008

Savell, Jeffrey W, Distinguished Professor
Animal Science
PHD, Texas A&M University, 1978

Sawyer, Jason E, Associate Professor
Animal Science
PHD, New Mexico State University, 2000

Skaggs, Chris L, Professor
Animal Science
PHD, Iowa State University, 1992

Smith, Gary C, Visiting Professor
Animal Science
PHD, Texas A&M University, 1968

Smith, Stephen B, Professor
Animal Science
PHD, University of California, Davis, 1980

Taylor, Thomas M, Associate Professor
Animal Science
PHD, University of Tennessee, Knoxville, 2006

Tedeschi, Luis O, Professor
Animal Science
PHD, Cornell University, 2001

Tomaszewski, Michael A, Visiting Professor
Animal Science
PHD, North Carolina State University, 1972

Welsh Jr, Thomas H, Professor
Animal Science
PHD, North Carolina State University, 1980

White, Sarah H, Assistant Professor
Animal Science
PHD, University of Florida, 2014

Wickersham, Tryon A, Associate Professor
Animal Science
PHD, Kansas State University, 2006

Wu, Guoyao, Professor
Animal Science
PHD, University of Alberta, Canada, 1989

Masters

- Master of Agriculture in Animal Science (p. 203)
- Master of Equine Industry Management in Equine Industry Management (p. 215)
- Master of Science in Animal Breeding (p. 193)
- Master of Science in Animal Science (p. 205)
- Master of Science in Physiology of Reproduction (p. 218)

Doctoral

- Doctor of Philosophy in Animal Breeding (p. 197)
- Doctor of Philosophy in Animal Science (p. 210)
- Doctor of Philosophy in Physiology of Reproduction (p. 222)

Certificates

- Food Safety Certificate (p. 228)
- Meat Science Certificate (p. 228)

Master of Science in Animal Breeding

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1 Meet with departmental graduate advisor to plan course of study for first semester. **When:** Before first semester registration. **Approved by:** Graduate advisor or chair of the intercollegiate faculty.

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 194)
- Degree Plan (p. 194)
- Credit Requirements (p. 194)
- Transfer of Credit (p. 195)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 195)
- Thesis Option (p. 195)
 - Thesis Proposal (p. 196)
 - Final Examination/Thesis Defense (p. 196)
- Non-Thesis Option (p. 196)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 197)
- Continuous Registration (p. 197)
- Time Limit (p. 197)
- Foreign Languages (p. 197)
- Application for Degree (p. 197)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Animal Breeding

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 198)
- Degree Plan (p. 199)
- Transfer of Credit (p. 199)
- Research Proposal (p. 199)
- Examinations (p. 200)
 - Preliminary Examination (p. 200)
 - Preliminary Examination Format (p. 200)
 - Preliminary Examination Scheduling (p. 200)
 - Report of Preliminary Examination (p. 200)
 - Retake of Failed Preliminary Examination (p. 201)
 - Final Examination (p. 201)
 - Report of Final Examination (p. 201)
- Dissertation (p. 201)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 202)
- Time Limit (p. 202)
- Continuous Registration (p. 202)
- Admission to Candidacy (p. 202)
- Languages (p. 202)
- 99-Hour Cap on Doctoral Degree (p. 202)
- Application for Degree (p. 203)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Agriculture in Animal Science

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 203)
- Degree Plan (p. 204)
- Credit Requirement (p. 204)
- Transfer of Credit (p. 204)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 204)
- Final Examination (p. 205)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible

for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 205)
- Time Limit (p. 205)
- Foreign Languages (p. 205)
- Application for Degree (p. 205)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Animal Science

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- | | | |
|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|

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|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 206)
- Degree Plan (p. 207)
- Credit Requirements (p. 207)
- Transfer of Credit (p. 207)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 207)
- Thesis Option (p. 208)
 - Thesis Proposal (p. 208)
 - Final Examination/Thesis Defense (p. 208)
- Non-Thesis Option (p. 209)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpss.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 209)
- Continuous Registration (p. 209)
- Time Limit (p. 209)
- Foreign Languages (p. 209)
- Application for Degree (p. 210)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Animal Science

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 211)
- Degree Plan (p. 211)
- Transfer of Credit (p. 212)
- Research Proposal (p. 212)
- Examinations (p. 212)
 - Preliminary Examination (p. 212)
 - Preliminary Examination Format (p. 212)
 - Preliminary Examination Scheduling (p. 213)
 - Report of Preliminary Examination (p. 213)
 - Retake of Failed Preliminary Examination (p. 213)
 - Final Examination (p. 213)
 - Report of Final Examination (p. 214)
- Dissertation (p. 214)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 214)
- Time Limit (p. 215)
- Continuous Registration (p. 215)
- Admission to Candidacy (p. 215)
- Languages (p. 215)
- 99-Hour Cap on Doctoral Degree (p. 215)
- Application for Degree (p. 215)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Equine Industry Management

The Master of Equine Industry Management (MEIM) is designed to prepare a student for a variety of careers in the equine industry. It is intended to provide students with a core set of skills considered to be vital to the equine industry and to guide students in customizing internship experiences based upon specific career path interests. The curriculum is focused on developing skill sets in equine sciences, marketing, management, public affairs, communication and leadership.

An individual with a baccalaureate degree (minimum GPR of 3.25) from a college or university of recognized standing may apply for admission to graduate studies to pursue the non-thesis degree of Master of Equine Industry Management. The MEIM degree is offered through the Department of Animal Science in the College of Agriculture and Life Sciences. The degree program is designed to admit a cohort of students

(maximum of 10 students) each fall semester. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may enhance such capabilities by completion of 6 SCH of professional internship experience designed to provide practical application in one or more aspects of the equine industry.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 216)
- Degree Plan (p. 216)
- Credit Requirements (p. 216)
- Transfer of Credit (p. 216)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 217)
- Final Examination (p. 217)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request,

in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Equine Industry Management degree. A total of 21 credit hours are required which includes ANSC 611, ANSC 612, ANSC 621, ANSC 684 (6 credit hours), ANSC 685 (3 credit hours) and VLCS 422. A total of 15 credit hours of prescribed elective courses must be selected from the following list: AGCJ 303, AGCJ 306, AGCJ 404, AGECE 619, ALED 340, MGMT 658, MGMT 675, MKTG 621 or MKTG 656.,.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit

hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
5. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
6. No credit hours of 691 (Research) may be used.
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.
9. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
10. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Equine Industry Management degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 218)
- Time Limit (p. 218)
- Foreign Languages (p. 218)
- Application for Degree (p. 218)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Equine Industry Management degree.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Equine Industry Management degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Physiology of Reproduction

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1
- Meet with departmental graduate advisor to plan course of study for first semester.
- When:** Before first semester registration.
Approved by: Graduate advisor or chair of the intercollegiate faculty.

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| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

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| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 219)
- Degree Plan (p. 219)
- Credit Requirements (p. 219)
- Transfer of Credit (p. 220)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 220)
- Thesis Option (p. 220)
 - Thesis Proposal (p. 221)
 - Final Examination/Thesis Defense (p. 221)
- Non-Thesis Option (p. 221)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 222)
- Continuous Registration (p. 222)
- Time Limit (p. 222)
- Foreign Languages (p. 222)
- Application for Degree (p. 222)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Physiology of Reproduction

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 223)
- Degree Plan (p. 224)
- Transfer of Credit (p. 224)
- Research Proposal (p. 224)
- Examinations (p. 225)
 - Preliminary Examination (p. 225)
 - Preliminary Examination Format (p. 225)
 - Preliminary Examination Scheduling (p. 225)
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 - Final Examination (p. 226)
 - Report of Final Examination (p. 226)
- Dissertation (p. 226)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 227)
- Time Limit (p. 227)
- Continuous Registration (p. 227)
- Admission to Candidacy (p. 227)
- Languages (p. 227)
- 99-Hour Cap on Doctoral Degree (p. 227)
- Application for Degree (p. 228)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Food Safety - Certificate

The Department of Animal Science at Texas A&M University offers a Graduate Certificate in Food Safety. The certificate is designed for graduate students interested in food microbiology, HACCP, sanitation, regulatory affairs, and quality control or assurance.

This program is available to graduate students pursuing any graduate degree at Texas A&M University. Upon completion, students will be prepared to meet the demands of careers in the area of food safety, and formal documentation of completing this program will be placed on the student's transcript. For more information please contact Kerri Gehring at kgehring@tamu.edu or (979) 862-3643.

To declare a Graduate Certificate in Food Safety contact the departmental graduate advisor.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------|---------------------------------------------------|-----------------------|
| Select four of the following: | | |
| ANSC 657/ NFSC 657 | Hazard Analysis and Critical Control Point System | 12 |
| DASC 606/ NFSC 606 | Microbiology of Foods | |
| | | |

| | | |
|-----------------------------|---------------------------------------------------------------------------------------------|----|
| ANSC 637 | Food Safety: Policy, Regulations and Issues | |
| ANSC 697/ NFSC 697 | Applied Microbiology for Foods of Animal Origin: Processing, Sanitation and Sanitary Design | |
| VIBS 615 VIBS 619 | Food Hygiene Food Toxicology II | |
| Total Semester Credit Hours | | 12 |

Meat Science - Certificate

The Department of Animal Science at Texas A&M University offers a Graduate Certificate in Meat Science.

This program is available to graduate students pursuing any graduate degree at Texas A&M University. Upon completion, students will have a broad-based and in-depth overview of meat science and technology, and formal documentation of completing this program will be placed on the student's transcript. Please contact Jeff Savell at j-savell@tamu.edu or (979) 845-3992 for more information.

To declare a Graduate Certificate in Meat Science contact the departmental graduate advisor.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|-------------------------------------------------|-----------------------|
| ANSC 607/ NFSC 607 | Physiology and Biochemistry of Muscle as a Food | 3 |
| ANSC 627 | Carcass Composition and Quality | 3 |
| ANSC 647/ NFSC 647 | Technology of Meat Processing and Distribution | 3 |
| ANSC 667/ NFSC 667 | Industrial Processed Meat Operations | 3 |
| Total Semester Credit Hours | | 12 |

Department of Biochemistry and Biophysics

<http://biochemistry.tamu.edu>

Head: Dorothy E. Shippen

The Department of Biochemistry and Biophysics offers programs of study and research leading to the MS and PhD degrees in biochemistry. These programs are designed to provide the background for a career in independent research; in addition, graduate students gain experience in teaching, inasmuch as each is required to serve as a teaching assistant during his or her graduate work. A non-thesis option for the MS degree is available to students not intending to enter a research career.

Ongoing research activities involve plants, animals and microorganisms and span the broad fields of molecular biology, protein and nucleic acid structure, virology, enzymology, biophysical chemistry and biochemical nutrition. The department occupies a modern research building that is well equipped to conduct biochemical research. Students entering graduate work in biochemistry are required to have adequate preparation in chemistry, mathematics, physics and molecular biology. The program leading to the PhD degree is designed for extensive involvement in research. The resulting dissertation must demonstrate a superior

knowledge and understanding of the subject area. In addition, the student must demonstrate a broad and commanding knowledge of general biochemistry. There is no language requirement. There is, however, an English requirement for all students, including those seeking the MS degree. The department encourages interdisciplinary research projects with other departments. Detailed information about the graduate program may be obtained from the Biochemistry Graduate Programs Office, which can be reached by mail, by email at biobiograd@tam.u.edu or by telephone at 1-800-4-TAMBIO. Information can also be obtained from the website at <http://biochemistry.tamu.edu>.

Faculty

Ayres, Nicola M, Senior Lecturer
Biochemistry & Biophysics
PHD, University of Nebraska - Lincoln, 1987

Bryk, Mary E, Associate Professor
Biochemistry & Biophysics
PHD, Albany Medical College, 1994

Cho, Jae H, Assistant Professor
Biochemistry & Biophysics
PHD, State University of New York at Stony Brook, 2006

Cruz-Reyes, Jorge A, Professor
Biochemistry & Biophysics
PHD, London School of Hygiene & Tropical Medicine, 1992

Datta, Sumana, Professor
Biochemistry & Biophysics
PHD, University of California - San Diego, 1987

Devarenne, Timothy P, Associate Professor
Biochemistry & Biophysics
PHD, University of Kentucky, 2000

Glasner, Margaret E, Associate Professor
Biochemistry & Biophysics
PHD, Massachusetts Institute of Technology, 2003

Gohil, Vishal M, Associate Professor
Biochemistry & Biophysics
PHD, Wayne State University, 2005

He, Ping, Professor
Biochemistry & Biophysics
PHD, Kansas State University, 2003

Henderson, Michelle, Senior Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 2010

Herman, Jennifer K, Associate Professor
Biochemistry & Biophysics
PHD, Indiana University, 2005

Hu, James C, Professor
Biochemistry & Biophysics
PHD, University of Wisconsin - madison, 1987

Igumenova, Tatyana I, Associate Professor
Biochemistry & Biophysics
PHD, Columbia University, 2003

Kunkel, Gary R, Associate Professor
Biochemistry & Biophysics
PHD, University of California - Los Angeles, 1977

Kurouski, Dzmitry L, Assistant Professor
Biochemistry & Biophysics
PHD, Suny at Albany, 2013

Li, Pingwei, Professor
Biochemistry & Biophysics
PHD, Peking University, 1996

Meek, Thomas D, Professor
Biochemistry & Biophysics
PHD, Pennsylvania State University, 1981

Miles, Bryant W, Senior Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 1998

Mullet, John E, Professor
Biochemistry & Biophysics
PHD, University of Illinois - Urbana-Champaign, 1981

Panin, Vladislav M, Professor
Biochemistry & Biophysics
PHD, Moscow State University, 1990

Park, William D, Professor
Biochemistry & Biophysics
PHD, University of Florida, 1977

Pellois, Jean-Philippe, Professor
Biochemistry & Biophysics
PHD, University of Houston, 2002

Perez, Stephanie A, Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 2012

Peterson, David O, Senior Professor
Biochemistry & Biophysics
PHD, Harvard University, 1977

Pishko, Elizabeth J, Lecturer
Biochemistry & Biophysics
PHD, University of Texas, 1993

Polymenis, Michael S, Professor
Biochemistry & Biophysics
PHD, Tufts University, 1994

Reinhart, Gregory D, Professor
Biochemistry & Biophysics
PHD, University of Wisconsin - madison, 1979

Reynolds, Mollie M, Senior Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 2010

Rye, Chavela M, Senior Lecturer
Biochemistry & Biophysics
PHD, MIT, 2014

Rye, Hays S, Associate Professor
Biochemistry & Biophysics
PHD, University of California-Berkeley, 1995

Sacchetti, James C, Professor
Biochemistry & Biophysics
PHD, Washington University in St. Louis, 1987

Shippen, Dorothy E, Professor
Biochemistry & Biophysics
PHD, University of Alabama at Birmingham, 1987

Stover, Patrick, Professor
Biochemistry & Biophysics
PHD, Virginia Commonwealth University, 1990

Straight, Paul D, Associate Professor
Biochemistry & Biophysics
PHD, University of Colorado, 2000

Sze, Sing, Associate Professor
Biochemistry & Biophysics
PHD, University of Southern California, 2000

Threadgill, David, Professor
Biochemistry & Biophysics
PHD, Texas A&M University, 1989

Young, Ryland F, Distinguished Professor
Biochemistry & Biophysics
PHD, University of Texas at Dallas, 1975

Zeng, Lanying, Associate Professor
Biochemistry & Biophysics
PHD, University of Illinois at Urbana-Champaign, 2007

Zhang, Junjie, Assistant Professor
Biochemistry & Biophysics
PHD, Baylor College of Medicine, 2009

Zhang, Xiuren, Professor
Biochemistry & Biophysics
PHD, Cornell University, 2003

Masters

- Master of Science in Biochemistry (p. 230)

Doctoral

- Doctor of Philosophy in Biochemistry (p. 234)

Master of Science in Biochemistry

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 231)
- Degree Plan (p. 231)
- Credit Requirements (p. 232)
- Transfer of Credit (p. 232)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 232)
- Thesis Option (p. 232)
 - Thesis Proposal (p. 233)
 - Final Examination/Thesis Defense (p. 233)
- Non-Thesis Option (p. 233)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional

Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the “Office of Graduate and Professional Studies Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student’s GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master’s degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student’s advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student’s advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student’s major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 234)
- Continuous Registration (p. 234)
- Time Limit (p. 234)
- Foreign Languages (p. 234)
- Application for Degree (p. 234)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Biochemistry

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 235)
- Degree Plan (p. 236)
- Transfer of Credit (p. 236)
- Research Proposal (p. 236)
- Examinations (p. 237)
 - Preliminary Examination (p. 237)
 - Preliminary Examination Format (p. 237)
 - Preliminary Examination Scheduling (p. 237)
 - Report of Preliminary Examination (p. 237)
 - Retake of Failed Preliminary Examination (p. 238)
 - Final Examination (p. 238)
 - Report of Final Examination (p. 238)
- Dissertation (p. 238)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 239)
- Time Limit (p. 239)
- Continuous Registration (p. 239)
- Admission to Candidacy (p. 239)
- Languages (p. 239)
- 99-Hour Cap on Doctoral Degree (p. 239)
- Application for Degree (p. 240)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Biological and Agricultural Engineering

<http://baen.tamu.edu>

Head: S. W. Searcy

The Department of Biological and Agricultural Engineering offers graduate studies leading to both engineering degrees and non-engineering degrees. Engineering degrees include Master of Science, Master of Engineering (non-thesis) and Doctor of Philosophy. In addition, the department offers courses and faculty supervision for students pursuing the Doctor of Engineering degree. Faculty expertise exists for study in the fields of environmental and natural resource engineering; bioprocess engineering; food engineering; biomaterial science; machine and energy systems; systems analysis; and food, feed and fiber processing. Active research programs are ongoing in all of these areas. Minimum preparation for entry into advanced study for engineering degrees would include a baccalaureate degree in engineering. Students with non-engineering degrees can be accepted into an engineering program but must complete some basic engineering prerequisite courses.

The department offers two non-engineering graduate degrees. The Master of Science in Agricultural Systems Management (AGSM) provides students with agricultural and business backgrounds the opportunity

to pursue either a research-based or a non-thesis graduate degree in systems management techniques for agricultural industries. The Master of Agriculture in Agricultural Systems Management is technology oriented with emphasis on systems analysis and management. It requires an internship for practical experience. The faculty also participates in supervision of students pursuing Master of Science and Doctor of Philosophy degrees from interdisciplinary faculties such as Water Management and Hydrologic Sciences. Minimum preparation for entry into advanced study for non-engineering degrees would include a baccalaureate degree in Agricultural Systems Management, Food Science and Technology, or equivalent. Depending on degree and area of study, prerequisite courses may be required to provide the technology background. There are distance education opportunities available in the MS AGSM program as well.

Excellent research and study facilities exist which enhance all degree programs. Research facilities include modern laboratories, computer systems, testing equipment, data acquisition systems, technical support and areas for field studies. Supporting courses are available in a wide variety of disciplines as well as within the department. No foreign language is required for a PhD in Biological and Agricultural Engineering.

Faculty

Agarwal, Girish S, Professor
Biological & Agricultural Eng
PHD, University of Rochester, 1969

Capareda, Sergio C, Professor
Biological & Agricultural Eng
PHD, Texas A&M University, 1990

Castell-Perez, M E, Professor
Biological & Agricultural Eng
PHD, Michigan State University, 1990

Engler, Cady R, Senior Professor
Biological & Agricultural Eng
PHD, University of Waterloo, 1980

Fernando, Sandun D, Professor
Biological & Agricultural Eng
PHD, University of Nebraska, 2003

Hardin, Robert G, Assistant Professor
Biological & Agricultural Eng
PHD, Texas A&M University, 2009

Huang, Yongheng, Associate Professor
Biological & Agricultural Eng
PHD, University of Nebraska - Lincoln, 2002

Kenimer, Ann L, Professor
Biological & Agricultural Eng
PHD, University of Illinois at Urbana-Champaign, 1990

King, Maria D, Assistant Professor
Biological & Agricultural Eng
PHD, Institute for Biotechnology, Berlin, Germany, 1986

Kingman, Douglas M, Instructional Associate Professor
Biological & Agricultural Eng
PHD, Purdue University, 2002

Lacey, Ronald E, Professor
Biological & Agricultural Eng
PHD, University of Kentucky, 1992

Mohanty, Binayak P, Professor
Biological & Agricultural Eng
PHD, Iowa State University, 1992

Mohtar, Rabi H, Professor
Biological & Agricultural Eng
PHD, Michigan State University, 1994

Moore, Janie M, Assistant Professor
Biological & Agricultural Eng
PHD, Purdue University, 2015

Moreira, Rosana G, Professor
Biological & Agricultural Eng
PHD, Michigan State University, 1989

Munster, Clyde L, Senior Professor
Biological & Agricultural Eng
PHD, North Carolina State University, 1992

Nikolov, Zivko L, Professor
Biological & Agricultural Eng
PHD, Iowa State University, 1986

Riskowski, Gerald L, Professor
Biological & Agricultural Eng
PHD, Iowa State University, 1986

Searcy, Stephen W, Senior Professor
Biological & Agricultural Eng
PHD, Oklahoma State University, 1980

Singh, Vijay P, Distinguished Professor
Biological & Agricultural Eng
PHD, Colorado State University, 1974

Smith, Patricia K, Professor
Biological & Agricultural Eng
PHD, North Carolina State University, 2000

Thomasson, John A, Professor
Biological & Agricultural Eng
PHD, University of Kentucky, 1997

Masters

- Master of Agriculture in Agricultural Systems Management (p. 241)
- Master of Engineering in Biological and Agricultural Engineering (p. 248)
- Master of Science in Agricultural Systems Management (p. 244)
- Master of Science in Biological and Agricultural Engineering (p. 251)

Doctoral

- Doctor of Philosophy in Biological and Agricultural Engineering (p. 255)

Master of Agriculture in Agricultural Systems Management

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 241)
- Degree Plan (p. 242)
- Credit Requirement (p. 242)
- Transfer of Credit (p. 242)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 242)
- Final Examination (p. 243)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member

or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicates their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to

the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 243)
- Time Limit (p. 243)
- Foreign Languages (p. 244)
- Application for Degree (p. 244)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Agricultural Systems Management

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 245)
- Degree Plan (p. 245)
- Credit Requirements (p. 245)
- Transfer of Credit (p. 245)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 246)
- Thesis Option (p. 246)

- Thesis Proposal (p. 246)
- Final Examination/Thesis Defense (p. 247)
- Non-Thesis Option (p. 247)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for

transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.

8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if

applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If

necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 247)
- Continuous Registration (p. 248)
- Time Limit (p. 248)
- Foreign Languages (p. 248)
- Application for Degree (p. 248)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one

regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Engineering in Biological and Agricultural Engineering

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 248)
- Degree Plan (p. 249)
- Credit Requirement (p. 249)
- Transfer of Credit (p. 249)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 249)
- Final Examination (p. 250)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department

Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee

and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:

- A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held

prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 250)
- Time Limit (p. 250)
- Foreign Languages (p. 250)
- Internship or Practicum (p. 251)
- Application for Degree (p. 251)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Biological and Agricultural Engineering

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 252)
- Degree Plan (p. 252)
- Credit Requirements (p. 252)
- Transfer of Credit (p. 252)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 253)

- Thesis Option (p. 253)
 - Thesis Proposal (p. 253)
 - Final Examination/Thesis Defense (p. 254)
- Non-Thesis Option (p. 254)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the

case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of **30** semester credit hours is required for the Master of Science degree..

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from

the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 681, 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 254)
- Continuous Registration (p. 255)
- Time Limit (p. 255)
- Foreign Languages (p. 255)
- Application for Degree (p. 255)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the

student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Biological and Agricultural Engineering

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the

subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 256)
- Degree Plan (p. 257)
- Transfer of Credit (p. 257)
- Research Proposal (p. 257)
- Examinations (p. 257)
 - Preliminary Examination (p. 257)
 - Preliminary Examination Format (p. 258)
 - Preliminary Examination Scheduling (p. 258)
 - Report of Preliminary Examination (p. 258)
 - Retake of Failed Preliminary Examination (p. 258)
 - Final Examination (p. 259)
 - Report of Final Examination (p. 259)
- Dissertation (p. 259)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

- Residence (p. 260)
- Time Limit (p. 260)

- Continuous Registration (p. 260)
- Admission to Candidacy (p. 260)
- Languages (p. 260)
- 99-Hour Cap on Doctoral Degree (p. 260)
- Application for Degree (p. 261)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Ecosystem Science and Management

<http://essm.tamu.edu>

Department Head: Dr. Cliff Lamb, Interim

Associate Department Head for Graduate Programs: Dr. Georgianne Moore

The Department of Ecosystem Science and Management (ESSM) offers graduate programs leading to the MS and PhD degrees in Ecosystem Science and Management, the MAgr degree in Ecosystem Science and Management, and the Master of Natural Resources Development (MNRD) degree. The MS and PhD degrees are intended to educate scientists and professionals in research and management in natural resources and related fields. The MS offers a thesis option for those who desire a serious research experience and a non-thesis option for those who seek a professional career outside of research. The MNRD and MAgr degrees are professional (non-research) degree programs providing advanced training in the science and management of natural resources, including a required internship.

Fields of study are available in:

1. Ecosystem Science: biogeochemistry, ecohydrology, global change ecology, landscape ecology, ecological restoration, ecophysiology;
2. Ecosystem Management: forest management, rangeland management, watershed management, natural resource economics and policy, human dimensions of ecosystem management;
3. Genetics, Systematics, Evolution: genetics, molecular biology, genomics, population genetics, tree improvement, plant systematics and evolution;
4. Spatial Sciences: geographic information systems, remote sensing, spatial analysis and statistics.

Facilities within the department include modern teaching classrooms and laboratories. There are fifteen state of the art research laboratories in the department, including the Stable Isotopes for Biosphere Sciences Laboratory, the Spatial Sciences Laboratory and the S.M. Tracy Herbarium. Field sites and facilities are available throughout Texas and many of them are associated with research and extension centers

connected with the department. The ESSM faculty acquire external competitive research grants and contracts that provide funding for additional research avenues and graduate student support.

Graduate courses are designed to develop the academic skills of individuals and to advance their knowledge in the professional fields related to ecosystem science and management. Departmental seminars facilitate graduate student development and serve to relate the most recent research findings applicable to the discipline. The department welcomes applications from students with diverse educational backgrounds, experiences and interests. Individually planned graduate programs assure a focused education that meets the needs of each candidate.

Additional information on academic programs and faculty may be found at <http://essm.tamu.edu>.

Faculty

Boutton, Thomas W, Professor
Ecosystem Science & Mgmt
PHD, Brigham Young University, 1979

Briske, David D, Professor
Ecosystem Science & Mgmt
PHD, Colorado State University, 1978

Casola, Claudio, Assistant Professor
Ecosystem Science & Mgmt
PHD, University of Pisa, Italy, 2006

Eriksson, Marian, Associate Professor
Ecosystem Science & Mgmt
PHD, University of Minnesota, 1989

Feagin, Russell A, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 2003

Gan, Jianbang, Professor
Ecosystem Science & Mgmt
PHD, Iowa State University, 1990

Hamilton, Wayne T, Senior Lecturer
Ecosystem Science & Mgmt
MS, Sul Ross State University, 1976

Hatch, Stephan L, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1975

Hyodo, Ayumi, Research Assistant Professor
Ecosystem Science & Mgmt
PHD, The University of Western Ontario, 2010

Knight, Robert W, Associate Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1980

Kothmann, Merwyn M, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1968

Kreuter, Urs P, Professor
Ecosystem Science & Mgmt
PHD, Utah State University, 1992

Lawing, Anna M, Assistant Professor
Ecosystem Science & Mgmt
PHD, Indiana University, 2012

Loopstra, Carol A, Associate Professor
Ecosystem Science & Mgmt
PHD, North Carolina State University, 1992

Moore, Georgianne W, Associate Professor
Ecosystem Science & Mgmt
PHD, Oregon State University, 2004

Noormets, Asko, Associate Professor
Ecosystem Science & Mgmt
PHD, Michigan Technological University, 2001

Popescu, Sorin C, Professor
Ecosystem Science & Mgmt
PHD, Virginia Tech, 2002

Rogers, William E, Professor
Ecosystem Science & Mgmt
PHD, Kansas State University, 1998

Shaw, Robert B, Senior Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1979

Smeins, Fred E, Visiting Professor
Ecosystem Science & Mgmt
PHD, University of Saskatchewan, 1967

Spalink, Daniel, Assistant Professor
Ecosystem Science & Mgmt
PHD, University of Wisconsin-Madison, 2015

Srinivasan, Raghavan, Professor
Ecosystem Science & Mgmt
PHD, Purdue University, 1992

Struminger, Rhonda S, Assistant Professor of the Practice
Ecosystem Science & Mgmt
PHD, Texas A&M University, 2013

Veldman, Joseph W, Assistant Professor
Ecosystem Science & Mgmt
PHD, University of Florida, 2010

Watson, Wesley T, Lecturer
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1999

West, Jason B, Associate Professor
Ecosystem Science & Mgmt
PHD, University of Georgia, 2002

Wilcox, Bradford P, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1986

Wu, Xinyuan Ben, Professor
Ecosystem Science & Mgmt
PHD, University of Tennessee, Knoxville, 1991

Masters

- Master of Agriculture in Ecosystem Science and Management (p. 262)
- Master of Natural Resources Development in Natural Resources Development (p. 275)
- Master of Science in Ecosystem Science and Management (p. 265)

Doctoral

- Doctor of Philosophy in Ecosystem Science and Management (p. 269)

Master of Agriculture in Ecosystem Science and Management

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

For more information about requirements specific to the **Master of Agriculture (MAgr) in Ecosystem Science and Management**, please also check the department's website (<https://essm.tamu.edu/academics/graduate/prospective/degrees/magr>) for this degree program.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 262)
- Degree Plan (p. 263)
- Credit Requirement (p. 263)
- Transfer of Credit (p. 263)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 263)
- Final Examination (p. 264)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her

major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.

- Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held

prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 264)
- Time Limit (p. 264)
- Foreign Languages (p. 265)
- Application for Degree (p. 265)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven

calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Ecosystem Science and Management

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- 1 The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- 2 Complete the application for degree form via the student's Howdy portal.

For more information about requirements specific to the **Master of Science (MS) in Ecosystem Science and Management**, please check the department's website (<https://essm.tamu.edu/academics/graduate/prospective/degrees/ms>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 266)
- Degree Plan (p. 266)
- Credit Requirements (p. 266)
- Transfer of Credit (p. 266)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 267)

- Thesis Option (p. 267)
 - Thesis Proposal (p. 267)
 - Final Examination/Thesis Defense (p. 267)
- Non-Thesis Option (p. 268)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 268)
- Continuous Registration (p. 268)
- Time Limit (p. 269)
- Foreign Languages (p. 269)
- Application for Degree (p. 269)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Ecosystem Science and Management

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete coursework detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

For more information about requirements specific to the **Doctor of Philosophy (PhD) in Ecosystem Science and Management**, please visit the department's web page (<https://essm.tamu.edu/academics/graduate/prospective/degrees/phd>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 270)
- Degree Plan (p. 270)
- Transfer of Credit (p. 271)
- Research Proposal (p. 271)
- Examinations (p. 271)
 - Preliminary Examination (p. 271)
 - Preliminary Examination Format (p. 271)
 - Preliminary Examination Scheduling (p. 272)
 - Report of Preliminary Examination (p. 272)
 - Retake of Failed Preliminary Examination (p. 272)

- Final Examination (p. 272)
- Report of Final Examination (p. 273)
- Dissertation (p. 273)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its

equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at

which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance

of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- All English language proficiency requirements are satisfied.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or

Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically

designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 273)
- Time Limit (p. 274)
- Continuous Registration (p. 274)
- Admission to Candidacy (p. 274)
- Languages (p. 274)
- 99-Hour Cap on Doctoral Degree (p. 274)
- Application for Degree (p. 275)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691, 5V98 or 5V99 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 5V98 and 5V99, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Natural Resources Development in Natural Resources Development

The **Master of Natural Resources Development (MNRD)** degree is designed for a student who wants professional graduate training with a management orientation in natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

Individuals with a baccalaureate degree from a college or university of recognized standing, or qualified Texas A&M University seniors during their last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Natural Resources Development. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in the Departments of Ecosystem Science and Management, Recreation, Park and Tourism Sciences, and Wildlife and Fisheries Sciences in the College of Agriculture and Life Sciences. It is possible for working professionals to earn this degree via distance education.

For more information about requirements specific to the **Master of Natural Resource Development**, please check the department's web pages (on-campus program (<https://essm.tamu.edu/academics/graduate/prospective/degrees/mnrd>) or distance-based program (<https://essm.tamu.edu/academics/graduate/prospective/degrees/mnrd-distance>)).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 275)
- Degree Plan (p. 275)
- Credit Requirement (p. 276)
- Transfer of Credit (p. 276)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 276)
- Final Examination (p. 277)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of**

the graduate faculty representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or record of study and is registered for 684 or 693 courses, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus Degree Program

A minimum of 36 hours is required for the Master of Natural Resources Development degree.

Distance Education Degree Program

The minimum requirements for the degree are 36 hours of distance-based coursework. Explore the list of online courses on the MNRD course offerings page (<https://essm.tamu.edu/academics/graduate/prospective/degrees/mnrd-distance/distance-courses>).

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work.** Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Distance Education Degree Program

The distance education modality allows a maximum of 9 hours of 300 or 400 level undergraduate transfer courses. See above for other transfer credit policies.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as formally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Master of Natural Resources Development degree candidates do not qualify to petition for an exemption from their final examination. Students in the distance program must also prepare a professional paper and participate in a final examination. This may be written, oral, or both, with an option to have a virtual oral examination.

Additional Requirements

Additional Requirements

- Residence (p. 277)
- Time Limit (p. 277)
- Foreign Languages (p. 277)
- Application for Degree (p. 277)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Natural Resources Development degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

A foreign language is not required for the Master of Natural Resources Development degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Entomology

Head: P. D. Teel

Graduate Advisor: C. Coates

The Department of Entomology offers both Doctor of Philosophy and thesis-option Master of Science degrees in entomology. Within these programs, subject matter areas include arthropod ecology, biological control, integrated pest management, molecular biology, physiology, genetics and toxicology, plant resistance, systematics, and urban,

medical/veterinary, and forensic entomology. Students come into the field of entomology with diverse interests, science backgrounds and career goals. Students are able to tailor their education and research interests for the respective degree program with the help of their major advisor and advisory committees. Graduates from these programs have become prominent leaders in entomological research, application, education, and regulatory affairs of private sector and government arenas, as well as international agencies and foreign countries.

The department occupies five floors of the Minnie Belle Heep Building and nearby buildings that house the Entomology Research Laboratory, the Biological Control Laboratory, Tick Research Laboratory, Forensic Entomology Laboratories, Rollins Urban and Structural Entomology Facility, and Janice and John G. Thomas Honey Bee Facility. Texas A&M is only one of a select group of U.S. locations for a federally approved quarantine laboratory. The department also maintains three multi-room greenhouses. The Texas A&M University Insect Collection is housed in the Minnie Belle Heep Building. It is the largest and most actively growing arthropod collection in the Southwest, containing approximately three million specimens representing more than 45,000 identified species. Graduate students often work with faculty located at 8 research and extension centers across Texas, each addressing entomological issues unique to their particular geographic region.

Specific course requirements in entomology are dependent upon previous training and professional experience. Students are expected to demonstrate mastery in the core knowledge areas of 1) insect biodiversity, systematics, and insect evolution; 2) insect ecology; 3) insect physiology, toxicology and insect genetics; 4) applied entomology on their graduate degree plans to be designed in consultation with their major advisor and advisory committee. Prospective students are directed to the Department of Entomology website for additional information.

Faculty

Adelman, Zachary N, Professor
Entomology
PHD, Colorado State University Fort Collins, 2000

Behmer, Spencer T, Professor
Entomology
PHD, University of Arizona, 1998

Bernal, Julio S, Professor
Entomology
PHD, University of California, Riverside, 1995

Brundage, Adrienne L, Instructional Assistant Professor
Entomology
PHD, Texas A&M University, 2012

Coates, Craig J, Instructional Associate Professor
Entomology
PHD, Australian National University, 1997

Coulson, Robert N, Professor
Entomology
PHD, University of Georgia, 1969

Eubanks, Micky D, Professor
Entomology
PHD, University of Maryland, College Park, 1997

Hamer, Gabriel L, Associate Professor
Entomology
PHD, Michigan State University, 2008

Heinz, Kevin M, Professor
Entomology
PHD, University of California, Riverside, 1989

Helms, Anjel Marie, Assistant Professor
Entomology
PHD, The Pennsylvania State University, 2015

Johnston, J S, Professor
Entomology
PHD, University of Arizona, 1972

Medina, Raul F, Professor
Entomology
PHD, University of Maryland, College Park, 2005

Myles II, Kevin M, Professor
Entomology
PHD, Colorado State University, 2003

Oliva Chavez, Adela, Assistant Professor
Entomology
PHD, University of Minnesota, 2014
BVetM, Escuela Agricola Panamericana, 2003

Oswald, John D, Professor
Entomology
PHD, Cornell University, 1991

Pietrantonio, Patricia, Professor
Entomology
PHD, University of California, Riverside, 1995

Rangel Posada, Juliana, Associate Professor
Entomology
PHD, Cornell University, 2010

Slotman, Michel A, Associate Professor
Entomology
PHD, Yale University, 2003

Song, Hojun, Associate Professor
Entomology
PHD, The Ohio State University Columbus, OH, 2006

Sword, Gregory A, Professor
Entomology
PHD, University of Texas at Austin, 1998

Tamborindéguy, Cecilia, Associate Professor
Entomology
PHD, Institut National Polytechnique de Toulouse, 2004

Tarone, Aaron M, Associate Professor
Entomology
PHD, Michigan State University, 2007

Teel, Pete D, Professor
Entomology
PHD, Oklahoma State University, 1978

Tomberlin, Jeffery K, Professor
Entomology
PHD, University of Georgia, 2001

Vargo, Edward L, Professor
Entomology
PHD, University of Georgia, Athens, 1986

Zhu Salzman, Keyan, Professor
Entomology
PHD, Purdue University, 1994

Masters

- Master of Science in Entomology (p. 279)

Doctoral

- Doctor of Philosophy in Entomology (p. 283)

Certificates

- Vector Biology and Vector-Borne Disease Response in Human and Animal Systems Certificate

Master of Science in Entomology

The Department of Entomology offers a thesis option Master of Science degree in entomology. Within this research-based program, subject matter areas include arthropod ecology, biological control, integrated pest management, molecular biology, physiology, genetics and toxicology, plant resistance, systematics, and urban, medical/veterinary, and forensic entomology. Students come into the field of entomology with diverse interests, science backgrounds and career goals. Students are able to tailor their education and research interests for this degree program with the help of their major advisor and advisory committees.

Specific course requirements in entomology are dependent upon previous training and professional experience. Students are expected to demonstrate mastery in the core knowledge areas of 1) Insect Biodiversity, Systematics, and Insect Evolution; 2) Insect Ecology; 3) Insect Physiology, Toxicology and Insect Genetics; and 4) Applied Entomology on their graduate degree plans to be designed in consultation with their major advisor and advisory committee. Prospective students are directed to <http://entomology.tamu.edu> for additional information.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1 Meet with departmental graduate advisor to plan course of study for first semester.
When: Before first semester registration.
Approved by: Graduate advisor or chair of the intercollegiate faculty.

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| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

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| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 280)
- Degree Plan (p. 280)
- Credit Requirements (p. 280)
- Transfer of Credit (p. 281)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 281)
- Thesis Option (p. 281)
 - Thesis Proposal (p. 282)
 - Final Examination/Thesis Defense (p. 282)
- Non-Thesis Option (p. 282)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 283)
- Continuous Registration (p. 283)
- Time Limit (p. 283)
- Foreign Languages (p. 283)
- Application for Degree (p. 283)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Entomology

The Department of Entomology offers a Doctor of Philosophy degree in entomology. Within this program, subject matter areas include arthropod ecology, biological control, integrated pest management, molecular biology, physiology, genetics and toxicology, plant resistance, systematics, and urban, medical/veterinary, and forensic entomology. Students come into the field of entomology with diverse interests, science backgrounds and career goals. Students are able to tailor their education and research interests for this degree program with the help of their major advisor and advisory committees. Graduates from these programs have become prominent leaders in entomological research, application, education, and regulatory affairs of private sector and government arenas, as well as international agencies and foreign countries.

Specific course requirements in entomology are dependent upon previous training and professional experience. Students are expected to demonstrate mastery in the core knowledge areas of 1) Insect Biodiversity, Systematics, and Insect Evolution; 2) Insect Ecology; 3) Insect Physiology, Toxicology and Insect Genetics; and 4) Applied Entomology on their graduate degree plans to be designed in consultation with their major advisor and advisory committee. Prospective students are directed to <http://entomology.tamu.edu/> for additional information.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 285) • Degree Plan (p. 285) • Transfer of Credit (p. 285) • Research Proposal (p. 286) • Examinations (p. 286) <ul style="list-style-type: none"> • Preliminary Examination (p. 286) • Preliminary Examination Format (p. 286) • Preliminary Examination Scheduling (p. 286) • Report of Preliminary Examination (p. 287) • Retake of Failed Preliminary Examination (p. 287) • Final Examination (p. 287) • Report of Final Examination (p. 287) • Dissertation (p. 288) | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 288)
- Time Limit (p. 288)
- Continuous Registration (p. 288)
- Admission to Candidacy (p. 288)
- Languages (p. 289)
- 99-Hour Cap on Doctoral Degree (p. 289)
- Application for Degree (p. 289)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Vector Biology and Vector-Borne Disease Response in Human and Animal Systems - Certificate

The Department of Entomology offers a Vector Biology and Vector-Borne Disease Response in Human and Animal Systems certificate.

It is designed to provide a concentration of subject-matter focusing on arthropod vectors of disease pathogens of humans, livestock, wildlife and companion animals. Course concentration includes survey of vectors and vector biology, surveillance, epidemiology, emergency response, preparedness and management. This program will be administered by the Department of Entomology in the College of Agriculture and Life Sciences. The certificate will bridge with the College of Veterinary Medicine and BioMedical Sciences and with the School of Public Health in the Texas A&M Health Sciences Center. This subject-matter concentration is designed to prepare students with competitive advantages for employment opportunities where planning, preparation and response to outbreaks of vector-borne diseases are advantageous.

The Centers for Disease Control and Prevention (CDC) have recognized there are long-term shortages of specialists and practitioners with knowledge and skills to respond to the complexities of vector-borne diseases critical to the needs for community, county, state and national responses. Mosquito, tick, and other arthropod-borne diseases such as Zika, Dengue, Chikungunya, West Nile Virus, Chagas, and Lyme Disease, are among many examples of vector-borne maladies with impacts on humans, companion animals, livestock and wildlife. Global trade and travel continue to pose additional risks for introductions of exotic vectors and vector-borne pathogens. The concentration of course work offered through this academic certificate is intended to prepare graduate students to manage and respond to outbreaks of vector-borne diseases as future professionals in many disciplines.

The Department of Labor Statistics estimates there will be continued growth of 5-11% employment through 2024 for discipline categories related to vector-borne diseases. Employment opportunities in the public health sector include environmental health service agencies at municipal, county, and state levels, mosquito control districts, the CDC, the Department of Defense, the Department of Homeland Security, the World Health Organization, and the Pan American Health Organization.

Students completing this certificate will be able to identify the various interest groups and interact with the range of participants in solving issues associated with a vector-borne disease outbreak.

Eligibility Requirements for Certificate Entrance:

- Successful completion of ENTO 618

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------|
| Required | | |
| ENTO 618 | Medical and Veterinary Entomology ¹ | 3 |
| Prescribed Electives | | |
| Select from the following: ^{2,3} | | 6 |
| Category A | | |
| ENTO 617 | Acarology | |
| ENTO 619 | Insect Toxicology | |
| ENTO 626/ | Methods in Vector-Borne Disease | |
| VIBS 626 | Ecology | |
| Category B | | |
| PHEB 602 | Biostatistics I | |
| PHEB 605 | Epidemiologic Methods I | |
| PHEB 610 | Epidemiologic Methods II | |
| PHEB 613 | Field Epidemiology Methods | |
| PHEB 615 | Disaster Epidemiology | |
| Category C | | |
| PHPM 639 | Global Health | |
| PHPM 640 | Health Policy and Politics | |
| PHPM 641 | Advanced Health Policy | |
| PHPM 642 | Public Health Emergency Preparedness Policy Issues | |
| Category D | | |
| VIBS 607 | Applied Epidemiology | |
| VIBS 608 | Epidemiology Methods I | |
| VIBS 610/ | Epidemiologic Methods II and Data | |
| VTMI 610 | Analysis | |
| VIBS 626/ | Methods in Vector-Borne Disease | |
| ENTO 626 | Ecology | |
| Capstone | | |
| ENTO 635 | Vector-Borne Disease Management and Response In Human and Animal Systems ^{1,2} | 3 |
| Total Semester Credit Hours | | 12 |

¹ Successfully complete ENTO 618 prior to registration in ENTO 635.

² Successfully complete 6 credit hours of prescribed electives prior to registration in ENTO 635.

³ At least 3 credit hours must be from Category B, C or D.

Meet the minimum qualifications for graduation as defined by Texas A&M University including a 3.0 cumulative GPA.

Apply for the certificate at the time of application for graduation through the Office of the Registrar.

Eligibility Requirements for Certificate Entrance:

- Successful completion of ENTO 618

Department of Horticultural Sciences

Head: D. Lineberger

Graduate Advisor: P. Klein

The graduate programs of the Department of Horticultural Sciences are designed to prepare individuals for careers in research, teaching, extension and industry. Research-oriented programs in the areas of fruit/nut/vegetable production and processing; ornamental horticulture/nursery crops; post-harvest physiology; greenhouse/floriculture production, marketing and economics; plant-microbe interactions; viticulture/enology; genetics/genomics; and plant physiology are available to students. Supporting work may be required in several related fields such as chemistry, biology, plant pathology, plant physiology, entomology, soils, genetics, nutrition and agricultural engineering. The specific objective of the individual student will guide his or her committee in the choice of courses from the departments mentioned above and others in special cases. More information on specific programs and faculty can be found at <http://hortsciences.tamu.edu/graduate-programs/>.

Programs of study leading to the Master of Agriculture, Master of Science and Doctor of Philosophy degrees are available.

Faculty

Arnold, Michael A, Professor
Horticultural Sciences
PHD, North Carolina State University, 1990

Botezatu, Ioana, Assistant Professor and Extension Enologist
Horticultural Sciences
PHD, Brock University (St. Catherines, ON, CANADA, 2014

Byrne, David H, Professor
Horticultural Sciences
PHD, Cornell University, 1980

Cisneros-Zevallos, Luis A, Professor
Horticultural Sciences
PHD, University of California, Davis, 1998

Crosby, Kevin M, Professor
Horticultural Sciences
PHD, Texas A&M University, 1999

Davis, Tim D, Professor & Senior Scientist
Horticultural Sciences
PHD, Oregon State University, 1983

Griffin, Whitney N, Lecturer
Horticultural Sciences
PHD, University of Maryland, 2014

Hall Jr, Charles R, Professor
Horticultural Sciences
PHD, Mississippi State University, 1988

King, Andrew R, Lecturer
Horticultural Sciences
PHD, Texas A&M University, 2015

Klein, Patricia E, Professor
Horticultural Sciences
PHD, Texas A&M University, 1989

Koiwa, Hisashi, Professor
Horticultural Sciences
PHD, Kyoto University, 1996

Lineberger, R D, Professor
Horticultural Sciences
PHD, Cornell University, 1978

Lombardini, Leonardo, Professor
Horticultural Sciences
PHD, Michigan State University, 1999

McEachern, George R, Visiting Professor
Horticultural Sciences
PHD, Texas A&M University, 1973

McKinley Jr, William J, Senior Lecturer
Horticultural Sciences
MAG, Texas A&M University, 1983

Miller Jr, Julian C, Visiting Professor
Horticultural Sciences
PHD, Michigan State University, 1972

Nessler, Craig L, Professor
Horticultural Sciences
PHD, Indiana University, 1976

Pierson, Elizabeth A, Professor
Horticultural Sciences
PHD, Washington State University, 1988

Reed, David W, Professor
Horticultural Sciences
PHD, Cornell University, 1979

Scheiner, Justin J, Assistant Professor and Extension Viticulture Specialist
Horticultural Sciences
PHD, Cornell University, 2010

Starman, Terri W, Professor
Horticultural Sciences
PHD, Texas A&M University, 1986

Vales, Maria Isabel, Associate Professor
Horticultural Sciences
PHD, University of Vigo, Spain, 1996

Masters

- Master of Agriculture in Horticulture (p. 291)
- Master of Science in Horticulture (p. 294)
- Master of Science in Plant Breeding (p. 304)

Doctoral

- Doctor of Philosophy in Horticulture (p. 298)
- Doctor of Philosophy in Plant Breeding (p. 308)

Master of Agriculture in Horticulture

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the

problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 291)
- Degree Plan (p. 292)
- Credit Requirement (p. 292)
- Transfer of Credit (p. 292)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 292)
- Final Examination (p. 293)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the

Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a

student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency

within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 293)
- Time Limit (p. 293)
- Foreign Languages (p. 293)
- Application for Degree (p. 293)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Horticulture

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 294)
- Degree Plan (p. 295)
- Credit Requirements (p. 295)
- Transfer of Credit (p. 295)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 295)
- Thesis Option (p. 296)
 - Thesis Proposal (p. 296)
 - Final Examination/Thesis Defense (p. 296)
- Non-Thesis Option (p. 297)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department

(or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method,

significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must

be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student

should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 297)
- Continuous Registration (p. 297)
- Time Limit (p. 297)
- Foreign Languages (p. 298)
- Application for Degree (p. 298)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Horticulture

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 299)
- Degree Plan (p. 299)
- Transfer of Credit (p. 300)
- Research Proposal (p. 300)
- Examinations (p. 300)
 - Preliminary Examination (p. 300)
 - Preliminary Examination Format (p. 300)
 - Preliminary Examination Scheduling (p. 301)
 - Report of Preliminary Examination (p. 301)
 - Retake of Failed Preliminary Examination (p. 301)
 - Final Examination (p. 301)
 - Report of Final Examination (p. 302)
- Dissertation (p. 302)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 302)
- Time Limit (p. 303)
- Continuous Registration (p. 303)
- Admission to Candidacy (p. 303)
- Languages (p. 303)
- 99-Hour Cap on Doctoral Degree (p. 303)
- Application for Degree (p. 304)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Plant Breeding

The Master of Science (MS) in Plant Breeding is offered in distance education and on-campus modalities. The distance education modality is especially appropriate for those working in the area of plant breeding within industry or government entities with access to research facilities who are seeking an advanced degree.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- 1 The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- 2 Complete the application for degree form via the student's Howdy portal.

Program Requirements
 Program Requirements

- Student's Advisory Committee (p. 305)
- Degree Plan (p. 305)
- Credit Requirements (p. 305)
- Transfer of Credit (p. 305)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 306)
- Thesis Option (p. 306)

- Thesis Proposal (p. 306)
- Final Examination/Thesis Defense (p. 307)
- Non-Thesis Option (p. 307)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Students enrolled in the distance education MS thesis option must have an approved distance co-chair at their location.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D,

F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types

of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 307)
- Continuous Registration (p. 308)
- Time Limit (p. 308)
- Foreign Languages (p. 308)
- Application for Degree (p. 308)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such

a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Plant Breeding

The Doctor of Philosophy (PhD) in Plant Breeding is offered in distance education and on-campus modalities. The distance education modality is especially appropriate for those working in the area of plant breeding

within industry or government entities with access to research facilities who are seeking an advanced degree.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 309)
- Degree Plan (p. 310)
- Transfer of Credit (p. 310)
- Research Proposal (p. 310)
- Examinations (p. 311)
 - Preliminary Examination (p. 311)
 - Preliminary Examination Format (p. 311)
 - Preliminary Examination Scheduling (p. 311)
 - Report of Preliminary Examination (p. 311)
 - Retake of Failed Preliminary Examination (p. 312)
 - Final Examination (p. 312)
 - Report of Final Examination (p. 312)
- Dissertation (p. 312)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

Students enrolled in the distance education PHD in Plant Breeding must have an approved distance co-chair at their location.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 309)
- Degree Plan (p. 310)
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 - Report of Final Examination (p. 312)
- Dissertation (p. 312)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

Students enrolled in the distance education PHD in Plant Breeding must have an approved distance co-chair at their location.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

On-Campus and Distance Education Degree Programs

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

On-Campus and Distance Education Degree Programs

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The

research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

On-Campus and Distance Education Degree Programs

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department

procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,

3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

On-Campus and Distance Education Degree Programs

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her

dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 313)
- Time Limit (p. 313)
- Continuous Registration (p. 313)
- Admission to Candidacy (p. 313)
- Languages (p. 314)
- 99-Hour Cap on Doctoral Degree (p. 314)
- Application for Degree (p. 314)

Residence

On-Campus Degree Program

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions

along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

Students enrolled in a distance education PHD in Plant Breeding do not have any residence requirement.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

On-Campus and Distance Education Degree Programs

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

On-Campus and Distance Education Degree Programs

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

On-Campus and Distance Education Degree Programs

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Nutrition and Food Science

Interim Head: S. Searcy

Graduate Advisor: K. de Ruiter

The graduate program in Nutrition and Food Science is administered by the Department of Nutrition and Food Science (Steve Searcy, Interim Head), and its membership includes faculty from Nutrition and Food Science, Animal Science, Biochemistry and Biophysics, Biological and Agricultural Engineering, Health and Kinesiology, Horticultural Sciences, Poultry Science, Sociology, Soil and Crop Sciences, Wildlife and Fisheries Sciences, Agricultural Economics, the School of Public Health, and Veterinary Integrative Biosciences.

Graduate training in Food Science is designed to provide advanced training in the basic sciences, processing technology, and engineering processes related to the production, processing, distribution, or utilization of food. Food sciences courses to strengthen the primary interest of the student are selected from those listed by the departments participating in the program. Areas of specialization include meat science, cereal chemistry, horticultural sciences, engineering, food chemistry, food microbiology, food safety, toxicology, and poultry science.

The graduate program in Nutrition offers the opportunity for advanced studies in both human and animal nutrition. The program is designed to allow students to build a strong research expertise in nutritional sciences as well as obtain advanced knowledge of basic and practical nutrition. Participating faculty members have research programs that address nutrient bioavailability, energy metabolism and performance, biochemical interactions and molecular nutrition. Programs are also available in social nutrition.

Courses of study lead to the Master of Agriculture, the Master of Science, and the Doctor of Philosophy degrees. Courses for the degree program are selected from the various departments to serve the needs of the graduate student. Questions about the graduate degrees in nutrition and food science can be directed to the graduate program coordinator at kderuiter@tamu.edu.

For more information, see <http://nfs.tamu.edu>.

Faculty

Acuff, Gary R, Professor
Nutrition & Food Science
PHD, Texas A&M University, 1985

Allred, Clinton D, Associate Professor
Nutrition & Food Science
PHD, University of Illinois at Urbana Champaign, 2002

Chapkin, Robert S, Distinguished Professor
Nutrition & Food Science
PHD, University of California, Davis, 1986

Chew, Boon P, Professor
Nutrition & Food Science
PHD, Purdue University, 1978

Creasy, Rebecca A, Lecturer
Nutrition & Food Science
PHD, University of Florida, 2013

Geismar, Karen S, Lecturer
Nutrition & Food Science
PHD, Texas Woman's University, Denton, 1998

Giles, Erin D, Assistant Professor
Nutrition & Food Science
PHD, McMaster University, 2015

Guo, Shaodong, Associate Professor
Nutrition & Food Science
PHD, Peking University, Beijing China, 1995

Kubena, Karen S, Professor
Nutrition & Food Science
PHD, Texas A&M University, 1982

Murano, Peter S, Senior Associate Professor
Nutrition & Food Science
PHD, Virginia Tech, 1989

Sun, Yuxiang, Associate Professor
Nutrition & Food Science
PHD, University of Manitoba, 2000

Talcott, Stephen T, Professor
Nutrition & Food Science
PHD, University of Arkansas, 2000

Talcott, Susanne U, Associate Professor
Nutrition & Food Science
PHD, University of Florida, 2004

Wu, Chaodong, Professor
Nutrition & Food Science
PHD, Beijing Medical University, 1998

Xie, Linglin, Associate Professor
Nutrition & Food Science
PHD, Kansas State University, 2008

Masters

- Master of Agriculture in Food Science and Technology (p. 315)
- Master of Science in Food Science and Technology (p. 318)
- Master of Science in Nutrition (p. 327)

Doctoral

- Doctor of Philosophy in Food Science and Technology (p. 321)
- Doctor of Philosophy in Nutrition (p. 331)

Certificates

- Dietetic Internship Certificate (p. 337)

Master of Agriculture in Food Science and Technology

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 315)
- Degree Plan (p. 316)
- Credit Requirement (p. 316)
- Transfer of Credit (p. 316)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 316)
- Final Examination (p. 317)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of

the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the

graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 317)
- Time Limit (p. 317)
- Foreign Languages (p. 317)
- Application for Degree (p. 318)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Food Science and Technology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Food Science and Technology will pursue a thesis.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 318)
- Degree Plan (p. 319)
- Credit Requirements (p. 319)
- Transfer of Credit (p. 319)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 319)
- Thesis Option (p. 320)
 - Thesis Proposal (p. 320)
 - Final Examination/Thesis Defense (p. 320)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the**

members must have an appointment to a department other than the student's major department. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpss.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*,

which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to

published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 321)
- Continuous Registration (p. 321)
- Time Limit (p. 321)
- Foreign Languages (p. 321)
- Application for Degree (p. 321)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Food Science and Technology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired

the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | | | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 323)
- Degree Plan (p. 323)
- Transfer of Credit (p. 323)
- Research Proposal (p. 324)
- Examinations (p. 324)
 - Preliminary Examination (p. 324)
 - Preliminary Examination Format (p. 324)
 - Preliminary Examination Scheduling (p. 324)
 - Report of Preliminary Examination (p. 325)
 - Retake of Failed Preliminary Examination (p. 325)
 - Final Examination (p. 325)
 - Report of Final Examination (p. 326)
- Dissertation (p. 326)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 326)
- Time Limit (p. 326)

- Continuous Registration (p. 326)
- Admission to Candidacy (p. 327)
- Languages (p. 327)
- 99-Hour Cap on Doctoral Degree (p. 327)
- Application for Degree (p. 327)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Nutrition

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 328)
- Degree Plan (p. 329)
- Credit Requirements (p. 329)
- Transfer of Credit (p. 329)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 329)

- Thesis Option (p. 330)
 - Thesis Proposal (p. 330)
 - Final Examination/Thesis Defense (p. 330)
- Non-Thesis Option (p. 331)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

11. . To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research

compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office

of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 331)
- Continuous Registration (p. 331)
- Time Limit (p. 331)
- Foreign Languages (p. 331)
- Application for Degree (p. 331)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along

with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Nutrition

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 333)
- Degree Plan (p. 333)
- Transfer of Credit (p. 333)
- Research Proposal (p. 334)
- Examinations (p. 334)
 - Preliminary Examination (p. 334)
 - Preliminary Examination Format (p. 334)
 - Preliminary Examination Scheduling (p. 334)

- Report of Preliminary Examination (p. 335)
- Retake of Failed Preliminary Examination (p. 335)
- Final Examination (p. 335)
- Report of Final Examination (p. 335)
- Dissertation (p. 336)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree.

Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 336)
- Time Limit (p. 336)
- Continuous Registration (p. 336)
- Admission to Candidacy (p. 336)
- Languages (p. 337)
- 99-Hour Cap on Doctoral Degree (p. 337)
- Application for Degree (p. 337)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

- met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Dietetic Internship - Certificate

The Texas A&M Dietetic Internship is accredited with the Accreditation Council for Education in Nutrition and Dietetics (ACEND). The program integrates research with intensive training in professional settings. A student gains experience in community nutrition/outpatient, business/food service management, and clinical dietetics. Major affiliating institutions include Baylor Scott and White Memorial Hospital and Clinic and The Central Texas Veterans Health Care System. Upon completion of the program, a student is eligible to take the registration examination to become a Registered Dietitian.

For more information, contact Karen S. Geismar, MS, RD, LD, CNSC; Dietetic Internship Director, ksgaismar@tamu.edu

Please refer to the Texas A&M Dietetic Internship Web site at <http://nfs.tamu.edu/academics/dietetic-internship>.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|----------------------------|-----------------------|
| NFSC 489 | Special Topics in... | 4 |
| NFSC 641 | Nutritional Biochemistry I | 3 |
| NFSC 681 | Seminar | 1 |
| NFSC 689 | Special Topics in... | 2 |
| NFSC 600-Level (p. 1754) | | 3 |
| Total Semester Credit Hours | | 13 |

Must participate on 29 week internship approved by the Dietetic Internship Director.

Department of Plant Pathology and Microbiology

<http://plantpathology.tamu.edu>

Head: Leland S. Pierson, III

Members of the Department of Plant Pathology and Microbiology direct the Master of Science and Doctor of Philosophy degrees in plant pathology, plant-microbiology, plant-microbial genetics and physiology. Students interact with dynamic faculty members to perform cutting edge research on all aspects of plant health and plant disease, including on the molecular basis of pathogenicity and the microbial and plant factors that affect virulence. Students perform their research on and off campus as required.

A competent command of the English language is required. For complete information on the options available, prospective students should contact the Department of Plant Pathology and Microbiology.

The Department offers a Master of Science and Doctorate in Plant Pathology and Microbiology.

Plant Pathology

Plant pathology is the science of plant diseases, their nature, causal agents and interrelated phenomena. The major objectives concern the scientific training of professional phytopathologists. Emphasis is placed on the fundamental and practical concepts associated with plant health and disease and pathology and the conceptual schemes of fungal, bacterial, viral, nematological, mycoplasmal and physiogenic diseases. In addition, facilities are available for research in most phases including physiology of parasitism, host-parasite relationships, genetics of host resistance, genetics of pathogen variation and variability, genetics of host-pathogen-hyperparasite populations, ecology of soil-borne pathogens, etiology and epidemiology of plant diseases, nematology, virology, phytotherapeutics and clinical phytopathology.

Faculty

Antony Babu, Sanjay, Assistant Professor
Plant Pathology & Microbiology
PHD, Newcastle University, 2018

Chappell, Thomas M, Assistant Professor
Plant Pathology & Microbiology
PHD, Duke University, 2010

Dickman, Martin B, Professor
Plant Pathology & Microbiology
PHD, University of Hawaii, 1986

Ebbole, Daniel J, Professor
Plant Pathology & Microbiology
PHD, Purdue University, 1988

Gonzalez, Carlos F, Professor
Plant Pathology & Microbiology
PHD, University of Nebraska - Lincoln, 1978

Gross, Dennis C, Professor
Plant Pathology & Microbiology
PHD, University of California, Davis, 1976

Ireland-Stoddard, Kati L, Instructional Assistant Professor
Plant Pathology & Microbiology
PHD, University of North Texas, 2012

Kenerley, Charles M, Professor
Plant Pathology & Microbiology
PHD, North Carolina State University, 1983

Kolomiets, Mikhailo V, Professor
Plant Pathology & Microbiology
PHD, Iowa State University, 1998

Magill, Clint W, Professor
Plant Pathology & Microbiology
PHD, Cornell University, 1969

Pierson III, Leland S, Professor
Plant Pathology & Microbiology
PHD, Washinton State University, 1986

Scholthof, Herman B, Professor
Plant Pathology & Microbiology
PHD, University of Kentucky, 1990

Scholthof, Karenbeth G, Professor
Plant Pathology & Microbiology
PHD, University of Kentucky, 1989

Shan, Libo, Professor
Plant Pathology & Microbiology
PHD, Kansas State University, 2003

Shaw, Brian D, Professor
Plant Pathology & Microbiology
PHD, Cornell University, 2000

Shim, Won-Bo, Professor
Plant Pathology & Microbiology
PHD, Purdue University, 2000

Wilkinson, Heather H, Professor
Plant Pathology & Microbiology
PHD, Binghamton University, 1996

Yuan, Shuhua, Professor
Plant Pathology & Microbiology
PHD, University of Tennessee, 2007

Masters

- Master of Science in Plant Pathology (p. 338)

Doctoral

- Doctor of Philosophy in Plant Pathology (p. 342)

Master of Science in Plant Pathology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

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|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 339)
- Degree Plan (p. 340)
- Credit Requirements (p. 340)
- Transfer of Credit (p. 340)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 340)
- Thesis Option (p. 341)
 - Thesis Proposal (p. 341)
 - Final Examination/Thesis Defense (p. 341)
- Non-Thesis Option (p. 342)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 342)
- Continuous Registration (p. 342)
- Time Limit (p. 342)
- Foreign Languages (p. 342)
- Application for Degree (p. 342)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Plant Pathology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 344)
- Degree Plan (p. 344)
- Transfer of Credit (p. 344)
- Research Proposal (p. 345)
- Examinations (p. 345)
 - Preliminary Examination (p. 345)
 - Preliminary Examination Format (p. 345)
 - Preliminary Examination Scheduling (p. 345)
 - Report of Preliminary Examination (p. 346)
 - Retake of Failed Preliminary Examination (p. 346)
 - Final Examination (p. 346)
 - Report of Final Examination (p. 347)
- Dissertation (p. 347)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 347)
- Time Limit (p. 347)

- Continuous Registration (p. 347)
- Admission to Candidacy (p. 348)
- Languages (p. 348)
- 99-Hour Cap on Doctoral Degree (p. 348)
- Application for Degree (p. 348)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Poultry Science

Head: D. J. Caldwell

Graduate Advisors: C. Alvarado, L. Berghman

Continual growth in the poultry industry increases the need for technical knowledge in the various fields of science needed for a successful poultry business. In no field of agriculture is an understanding of the fundamental and applied sciences more marketable or more rewarding than in the modern intensive production of poultry meat and eggs. Because the bird is the basis for the department's graduate program, additional areas of interest include exotic and wildlife species as well as cellular and molecular studies using avian models. A major objective of the department is to offer training for work in research, teaching, extension or industrial operations. We also strive to bridge the gap in both directions between courses in fundamental biochemistry, genetics, physiology and economics and their practical application to the production of poultry and the care of all avian species.

The department offers graduate studies leading to the Master of Agriculture (traditional and online), Master of Science and Doctor of Philosophy degrees. In addition to a major in poultry science, students may pursue majors through many intercollegiate faculties including nutrition, food science and technology, and genetics. Faculty expertise exists for study in genetics, reproduction, nutrition, biochemistry, physiology, environment, management, microbiology, processing and marketing for all commercially-important species. The faculty are also actively involved in many of these disciplines for other avian species and in the pursuit of basic cellular and molecular knowledge.

Faculty

Alvarado, Christine Z, Professor
Poultry Science
PHD, Texas A&M University, 2001

Archer, Gregory, Associate Professor & Extension Specialist
Poultry Science
PHD, Texas A&M University, 2005

Athrey, Giridhar N, Assistant Professor
Poultry Science
PHD, University of Louisiana at Lafayette, 2009

Bailey, Christopher A, Professor
Poultry Science
PHD, Texas A&M University, 1982

Berghman, Luc R, Professor
Poultry Science
PHD, University of Leuven, Belgium, 1987

Caldwell, David J, Professor
Poultry Science
PHD, Texas A&M University, 1997

Carey, John B, Professor
Poultry Science
PHD, Kansas State University, 1982

Coufal, Craig, Associate Professor & Extension Specialist
Poultry Science
PHD, Texas A&M University, 2005

Duong, Tri, Associate Professor
Poultry Science
PHD, North Carolina State University, 2008

Farnell, Morgan B, Associate Professor
Poultry Science
PHD, Texas A&M University, 2003

Farnell, Yuhua Z, Instructional Assistant Professor
Poultry Science
PHD, Texas A&M University, 2002

McElroy, Audrey, Professor & Extension Specialist
Poultry Science
PHD, Texas A&M University, 1998

Pillai, Suresh D, Professor
Poultry Science
PHD, University of Arizona, 1989

Walzem, Rosemary L, Professor
Poultry Science
PHD, University of California, Davis, 1987

Masters

- Master of Agriculture in Poultry Science (p. 349)
- Master of Science in Poultry Science (p. 352)

Doctoral

- Doctor of Philosophy in Poultry Science (p. 356)

Master of Agriculture in Poultry Science

The Master of Agriculture (MAgr) degree is designed for a student who wants professional graduate training with a management orientation in agriculture, food and natural resources. It is intended to emphasize the

problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing, or a qualified Texas A&M University senior during his/her last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Agriculture. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in select academic departments of the College of Agriculture and Life Sciences.

The Master of Agriculture in Poultry Science is also available via distance education. For more information regarding the online version of this degree, please visit <http://posc.tamu.edu/academics/distance-education/>

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 349)
- Degree Plan (p. 350)
- Credit Requirement (p. 350)
- Transfer of Credit (p. 350)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 350)
- Final Examination (p. 351)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department or chair of the intercollegiate faculty, if applicable, concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department or intercollegiate faculty, if appropriate, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee or chair of intercollegiate faculty, if applicable, to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 hours is required for the Master of Agriculture degree. Approximately 12 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. . For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. See the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu/Buttons/Calendars>. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English language proficiency requirements must be satisfied prior to scheduling the examination

A candidate for the Master of Agriculture degree does not qualify to petition for an exemption from his/her final examination. A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of**

Graduate and Professional Studies must be notified in writing of any cancellations. Examinations which are not complete and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given **only one** opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department degree program can have a stricter requirement provided there is consistency within all degree programs within a department program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 351)
- Time Limit (p. 352)
- Foreign Languages (p. 352)
- Application for Degree (p. 352)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Agriculture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education degree program does not have any residence requirements.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Agriculture degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Poultry Science

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |

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| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 353)
- Degree Plan (p. 353)
- Credit Requirements (p. 353)
- Transfer of Credit (p. 353)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 354)

- Thesis Option (p. 354)
 - Thesis Proposal (p. 354)
 - Final Examination/Thesis Defense (p. 355)
- Non-Thesis Option (p. 355)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research

compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office

of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 355)
- Continuous Registration (p. 356)
- Time Limit (p. 356)
- Foreign Languages (p. 356)
- Application for Degree (p. 356)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along

with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Poultry Science

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

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|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 357)
- Degree Plan (p. 357)
- Transfer of Credit (p. 358)
- Research Proposal (p. 358)
- Examinations (p. 358)
 - Preliminary Examination (p. 358)
 - Preliminary Examination Format (p. 358)
 - Preliminary Examination Scheduling (p. 359)

- Report of Preliminary Examination (p. 359)
- Retake of Failed Preliminary Examination (p. 359)
- Final Examination (p. 360)
- Report of Final Examination (p. 360)
- Dissertation (p. 360)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.

- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 360)
- Time Limit (p. 361)
- Continuous Registration (p. 361)
- Admission to Candidacy (p. 361)
- Languages (p. 361)
- 99-Hour Cap on Doctoral Degree (p. 361)
- Application for Degree (p. 362)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691, (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Recreation, Park and Tourism Sciences

<http://rpts.tamu.edu>

Head: C. Scott Shafer

Graduate Advisor: J. F. Petrick

Graduate course offerings in the Department of Recreation, Park and Tourism Sciences are designed to generate and disseminate knowledge concerning the development, management and sustainable use of recreation, park, community, and tourism resources and opportunities. The focus of the program is on the relationships between people, recreational, community and tourism developments, and the natural resource base. The curriculum has five main areas of emphasis: recreation and park administration; recreation and natural resources management; tourism; community development; and youth development. The first emphasis deals primarily with the public sector, while the third deals primarily with the private sector. Recreation and natural resource management, community development, and youth development involves both sectors.

Graduate study in these areas is interdisciplinary. Cooperative relationships exist with a wide range of outstanding graduate-level programs in the University. This provides students with an opportunity to structure an individualized program of study in the field of their choice. Courses selected within the department and in supporting fields are designed to serve the individual needs of students interested in teaching, public service, research, and administration of recreation, park, community and tourism developments.

The Department of Recreation, Park and Tourism Sciences offers courses of study leading to the Master of Recreation and Resources Development; Master of Natural Resources Development; Master of Science (thesis and non-thesis) and Doctor of Philosophy degrees in recreation, park and tourism sciences. The MRRD is a professional degree with a major in Recreation and Resources Development for those who are already working in or anticipate a career in professional service. The MNRD with a major in Natural Resources Development is identical in intent and general requirements to those for the MRRD; however, more emphasis is placed on undertaking an interdisciplinary mix of coursework from other natural resources programs at Texas A&M University. The MS thesis degree prepares students for advanced graduate study at the PhD level, which often leads to a career in university research and teaching. The MS non-thesis degree emphasizes professional development. It includes additional courses in the student's selected field instead of a thesis. Non-thesis MRRD, MNRD and MS students may elect a professional internship.

Faculty

Crompton, John L, Distinguished Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 1977

Durko, Angela M, Instructional Assistant Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2014

Ellis, Gary D, Professor
Recreation, Park & Tourism Sc
PHD, North Texas State University, 1983

Ettekal, Andrea V, Assistant Professor
Recreation, Park & Tourism Sc
PHD, Arizona State University, 2014

Gramann, James H, Professor
Recreation, Park & Tourism Sc
PHD, University of Illinois at Urbana-Champaign, 1980

Hodges, Louis, Associate Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 1971

Jacobsen, Nicolas F, Assistant Lecturer
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2017

Jamal, Tazim B, Professor
Recreation, Park & Tourism Sc
PHD, University of Calgary, 1997

Kaiser, Ronald A, Professor
Recreation, Park & Tourism Sc
LLM, University of California, Berkeley, 1989
JD, Thomas M. Cooley Law School, 1977

Kyle, Gerard T, Professor
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 2001

Martz, Jill T, Executive Professor
Recreation, Park & Tourism Sc
PHD, University of Tennessee, 2004
PHD, University of Tennessee, Knoxville, 2004

Matarrita Cascante, David, Associate Professor
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 2008

Outley, Corliss D, Associate Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2000

Petrick, James F, Professor
Recreation, Park & Tourism Sc
PHD, Clemson University, 1999

Ramer, Svitlana I, Lecturer
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 2014

Richmond, Daniel J, Lecturer
Recreation, Park & Tourism Sc
PHD, University of Utah, 2016

Schuett, Michael A, Instructional Professor
Recreation, Park & Tourism Sc
PHD, University of Illinois at Urbana - Champaign, 1991

Scott, David, Professor
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 1990

Shafer, C S, Professor
Recreation, Park & Tourism Sc
PHD, Clemson University, 1993

Smith, William E, Assistant Lecturer
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2012

Stronza, Amanda L, Associate Professor
Recreation, Park & Tourism Sc
PHD, University of Florida, 2000

Suess Raeisinafchi, Courtney, Assistant Professor
Recreation, Park & Tourism Sc
PHD, University of Nevada, Las Vegas, 2014

Wang, Jun, Assistant Professor
Recreation, Park & Tourism Sc
PHD, Colorado State University, 2013

Masters

- Master of Recreation and Youth Development (p. 366)
- Master of Science in Recreation, Park and Tourism Sciences (p. 368)

Doctoral

- Doctor of Philosophy in Recreation, Park and Tourism Sciences (p. 372)

Certificates

- Certificate in Community Development (p. 378)

Master of Natural Resources Development in Natural Resources Development

The **Master of Natural Resources Development (MNRD)** degree is designed for a student who wants professional graduate training with a management orientation in natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

Individuals with a baccalaureate degree from a college or university of recognized standing, or qualified Texas A&M University seniors during their last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Natural Resources Development. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in the Departments of Ecosystem Science and Management, Recreation, Park and Tourism Sciences, and Wildlife and Fisheries Sciences in the College of Agriculture and Life Sciences. It is possible for working professionals to earn this degree via distance education.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 363)
- Degree Plan (p. 364)
- Credit Requirement (p. 364)
- Transfer of Credit (p. 364)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 364)
- Final Examination (p. 365)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree.

Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or record of study and is registered for 684 or 693 courses, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus Degree Program

A minimum of 36 hours is required for the Master of Natural Resources Development degree.

Distance Education Degree Program

The minimum requirements for the degree are 36 hours of distance-based coursework. Explore the list of online courses on the MNRD course offerings page (<https://essm.tamu.edu/academics/graduate/prospective/degrees/mnrd-distance/distance-courses>).

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution

with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work.** Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Distance Education Degree Program

The distance education modality allows a maximum of 9 hours of 300 or 400 level undergraduate transfer courses. See above for other transfer credit policies.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or

oral or both. The examination is conducted by the student's advisory committee as formally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Master of Natural Resources Development degree candidates do not qualify to petition for an exemption from their final examination. Students in the distance program must also prepare a professional paper and participate in a final examination. This may be written, oral, or both, with an option to have a virtual oral examination.

Additional Requirements

Additional Requirements

- Residence (p. 365)
- Time Limit (p. 365)
- Foreign Languages (p. 365)
- Application for Degree (p. 366)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Natural Resources Development degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

A foreign language is not required for the Master of Natural Resources Development degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Recreation and Youth Development

The **Master of Recreation and Youth Development (MRYD)** degree is designed for a student who wants professional graduate training with a management orientation in recreation resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

Individuals with a baccalaureate degree from a college or university of recognized standing, or qualified Texas A&M University seniors during their last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Recreation and Resources Development. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in the Recreation, Park and Tourism Sciences department in the College of Agriculture and Life Sciences. This program is approved to be offered in face-to-face and distance formats. The program is currently being offered in the on-campus option only.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 366)

Degree Plan (p. 366)

Credit Requirements (p. 367)

Transfer of Credit (p. 367)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 367)

Final Examination (p. 367)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of

his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Committee Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or record of study and is registered for courses such as 684 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the**

deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 hours is required for the Master in Recreation and Youth Development degree. Approximately 20 credit hours are to be taken outside of the student's degree option.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working**

days in advance of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as formally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master in Recreation and Youth Development degree does not qualify to petition for an exemption from the final examination.

Additional Requirements

Additional Requirements

- Residence (p. 368)
- Time Limit (p. 368)
- Foreign Languages (p. 368)
- Application for Degree (p. 368)

Residence

On-Campus Degree Programs

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Science in Recreation and Youth Development degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

A foreign language is not required for the Master of Recreation and Resources Development degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Recreation, Park and Tourism Sciences

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 369)
- Degree Plan (p. 370)
- Credit Requirements (p. 370)
- Transfer of Credit (p. 370)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 370)
- Thesis Option (p. 371)
 - Thesis Proposal (p. 371)
 - Final Examination/Thesis Defense (p. 371)
- Non-Thesis Option (p. 372)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 372)
- Continuous Registration (p. 372)
- Time Limit (p. 372)
- Foreign Languages (p. 372)
- Application for Degree (p. 372)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Recreation, Park and Tourism Sciences

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | | | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 374)
- Degree Plan (p. 374)
- Transfer of Credit (p. 374)
- Research Proposal (p. 375)
- Examinations (p. 375)
 - Preliminary Examination (p. 375)
 - Preliminary Examination Format (p. 375)
 - Preliminary Examination Scheduling (p. 375)
 - Report of Preliminary Examination (p. 376)
 - Retake of Failed Preliminary Examination (p. 376)
 - Final Examination (p. 376)
 - Report of Final Examination (p. 377)
- Dissertation (p. 377)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 377)
- Time Limit (p. 377)

- Continuous Registration (p. 377)
- Admission to Candidacy (p. 378)
- Languages (p. 378)
- 99-Hour Cap on Doctoral Degree (p. 378)
- Application for Degree (p. 378)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Community Development - Certificate

The Department of Recreation, Park and Tourism Sciences offers this transcribed certificate through its Program in Rural Sociology and Community Studies. This twelve-hour certificate program provides a student with an understanding of the principles and processes of community development. It addresses issues of decision making and leadership, human organization and communication, institutional capacity and enhancement, and resource mobilization and management. It also gives attention to special populations in development processes and outcomes. The program is available to students pursuing any graduate degree at Texas A&M University and who meet enrollment criteria. For more information contact the Graduate Coordinator in the Department of Recreation, Park and Tourism Sciences or the Leader of the Program in Rural Sociology and Community Studies.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------------------------------------------------------|---------------------------------------------------|-----------------------|
| Core Courses | | |
| RPTS 604 | Principles of Community and Community Development | 3 |
| RPTS 605 | Community Organization | 3 |
| Other Approved Courses | | |
| Select two courses from the Other Approved Courses list. | | 6 |
| Total Semester Credit Hours | | 12 |

Other Approved Courses

| Code | Title | Semester Credit Hours |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------|
| Other Approved Courses in the College Agriculture and Life Sciences Relevant to the Certificate | | |
| AGEC 603 | Land Economics | 3 |
| AGEC 605 | Rural Real Estate Appraisal and Organization | 3 |
| ESSM 651 | Geographic Information System for Resource Management | 3 |

| | | |
|-----------------------|----------------------------------------------------------------------------------|---|
| ESSM 652 | Advanced Topics in Geographic Information Systems | 3 |
| RENr 660/ ESSM 672 | Environmental Impact Analysis for Renewable Natural Resources | 3 |
| RPTS 606 | Overview of Tourism | 3 |
| RPTS 609 | Social, Economic and Cultural Issues in Outdoor Recreation and Natural Resources | 3 |
| RPTS 626 | Social Impacts of Tourism | 3 |
| RPTS 646 | Heritage Tourism | 3 |
| RPTS 666 | Parks, Tourism and the Natural Environment | 3 |
| RPTS 670 | Youth Development Programs and Services | 3 |

Approved Courses outside the College of Agriculture and Life Sciences Relevant to the Certificate

| | | |
|----------|----------------------------------------------------------------------|---|
| ARCH 673 | Design for Active Living | 3 |
| ARCH 676 | Survey of Human Behavior and Design | 3 |
| EHRD 605 | Principles and Practices of Leadership in Human Resource Development | 3 |
| GEOG 616 | Urban Geography | 3 |
| GEOG 619 | Human Impact on the Environment | 3 |
| GEOG 660 | Applications in GIS | 3 |
| HLTH 631 | Community and Public Health | 3 |
| LDEV 671 | Sustainable Development | 3 |
| PLAN 610 | Structure and Function of Urban Settlements | 3 |
| PLAN 625 | Geographical Information Systems in Landscape and Urban Planning | 3 |
| PLAN 626 | Advanced GIS in Landscape Architecture and Urban Planning | 3 |
| PLAN 656 | Housing and Community | 3 |
| SOCI 667 | Seminar in Race and Ethnic Relations | 3 |
| SOCI 687 | Seminar in Rural Sociology | 3 |

Final examination conducted by the Advisory Council. The test will be based on the material from RPTS 604 and RPTS 605. Student will be asked to take it when applying for the certificate.

Department of Soil and Crop Sciences

<http://soilcrop.tamu.edu>

Head: D. D. Baltensperger

Graduate Advisor: C. W. Smith

The graduate programs of the Department of Soil and Crop Sciences are designed to prepare individuals for careers in research, teaching, extension and industry, and management of agronomic enterprises. Agronomy, food science and technology, genetics, molecular and

environmental plant sciences, plant breeding, soil science, and water management and hydrological science are majors available to students.

Research-oriented programs in agronomy, food science and technology, genetics, plant breeding, molecular and environmental plant sciences, soil science, and water management and hydrological science lead to the MS or PhD degree in these fields. There is no language requirement at the MS or PhD level. Members of the faculty have expertise in cereal chemistry, crop breeding, crop physiology, environmental agronomy, cytogenetics, plant physiology, protein chemistry, environmental soil science, soil chemistry, soil fertility, soil genesis and classification, soil microbiology, soil mineralogy, soil physics, soil-plant-water relations, turfgrass science, weed science and water microbiology. Recipients of the MS and PhD degrees may obtain a research-, teaching-industry- or extension-oriented position upon graduation.

Research based distance education MS and PHD degrees in Plant Breeding are available.

Multidisciplinary programs can be arranged with other academic departments in the University.

Faculty

Aitkenhead, Jacqueline A, Associate Professor
Soil & Crop Sciences
PHD, University of New Hampshire, 2000

Awika, Joseph M, Professor
Soil & Crop Sciences
PHD, Texas A&M University College Station, 2018
PHD, Texas A&M University, 2003

Bagavathiannan, Muthukumar V, Assistant Professor
Soil & Crop Sciences
PHD, University of Manitoba, Canada, 2010

Baltensperger, David D, Professor
Soil & Crop Sciences
PHD, New Mexico State University, 1981

Carson, Katherine H, Instructional Assistant Professor
Soil & Crop Sciences
PHD, University of Arkansas, 1999

Deng, Youjun, Associate Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2001

Finlayson, Scott A, Associate Professor
Soil & Crop Sciences
PHD, University of Calgary, 1994

Gentry, Terry J, Professor
Soil & Crop Sciences
PHD, University of Arizona, 2003

Hague, Steven S, Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2000

Hays, Dirk B, Professor
Soil & Crop Sciences
PHD, University of Calgary, 1997

Heilman, James L, Professor
Soil & Crop Sciences
PHD, Kansas State University, 1977

Howe, Julie A, Associate Professor
Soil & Crop Sciences
PHD, University of Wisconsin - Madison, 2004

Ibrahim, Amir M, Professor
Soil & Crop Sciences
PHD, Colorado State University, 1998

Jessup, Russell W, Associate Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2005

McInnes, Kevin J, Professor
Soil & Crop Sciences
PHD, Kansas State University, 1985

Morgan, Cristine L, Professor
Soil & Crop Sciences
PHD, University of Wisconsin, 2003

Murray, Seth C, Associate Professor
Soil & Crop Sciences
PHD, Cornell University, 2008

Neely, Haly L, Assistant Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2013

Okumoto, Sakiko, Associate Professor
Soil & Crop Sciences
PHD, Tubingen University, 2003

Rajan, Nithya, Associate Professor
Soil & Crop Sciences
PHD, Texas Tech University, 2007

Rooney, William L, Professor
Soil & Crop Sciences
PHD, University of Minnesota, 1992

Schwab, Arthur P, Professor
Soil & Crop Sciences
PHD, Colorado State University, 1981

Septiningsih, Endang M, Associate Professor
Soil & Crop Sciences
PHD, Cornell University, 2002

Smith, Ashly Peyton, Assistant Professor
Soil & Crop Sciences
PHD, University of Wisconsin, 2018
BVetM, University of Washington, 2004

Smith, C W, Professor
Soil & Crop Sciences
PHD, University of Tennessee, 1974

Stelly, David M, Professor
Soil & Crop Sciences
PHD, University of Wisconsin - madison, 1983

Thomson, Michael J, Professor
Soil & Crop Sciences
PHD, Cornell University, 2002

Wherley, Benjamin G, Associate Professor
Soil & Crop Sciences
PHD, North Carolina State University, 2008

Zhang, Hongbin, Professor
Soil & Crop Sciences
PHD, University of California, Davis, 1990

Masters

- Master of Science in Agronomy (p. 380)
- Master of Science in Plant Breeding (p. 390)
- Master of Science in Soil Science (p. 401)

Doctoral

- Doctor of Philosophy in Agronomy (p. 384)
- Doctor of Philosophy in Plant Breeding (p. 395)
- Doctor of Philosophy in Soil Science (p. 405)

Certificates

- Certificate in Regulatory Science in Food Systems

Master of Science in Agronomy

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 381)
- Degree Plan (p. 382)
- Credit Requirements (p. 382)
- Transfer of Credit (p. 382)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 382)
- Thesis Option (p. 383)
 - Thesis Proposal (p. 383)
 - Final Examination/Thesis Defense (p. 383)
- Non-Thesis Option (p. 384)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 384)
- Continuous Registration (p. 384)
- Time Limit (p. 384)
- Foreign Languages (p. 384)
- Application for Degree (p. 384)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Agronomy

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the

degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 386)
- Degree Plan (p. 386)
- Transfer of Credit (p. 386)
- Research Proposal (p. 387)
- Examinations (p. 387)
 - Preliminary Examination (p. 387)
 - Preliminary Examination Format (p. 387)
 - Preliminary Examination Scheduling (p. 387)

- Report of Preliminary Examination (p. 388)
- Retake of Failed Preliminary Examination (p. 388)
- Final Examination (p. 388)
- Report of Final Examination (p. 388)
- Dissertation (p. 389)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 389)
- Time Limit (p. 389)
- Continuous Registration (p. 389)
- Admission to Candidacy (p. 389)
- Languages (p. 390)
- 99-Hour Cap on Doctoral Degree (p. 390)
- Application for Degree (p. 390)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

- 5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Plant Breeding

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 391)
- Degree Plan (p. 392)
- Credit Requirements (p. 392)
- Transfer of Credit (p. 392)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 392)
- Thesis Option (p. 393)
 - Thesis Proposal (p. 393)
 - Final Examination/Thesis Defense (p. 393)
- Non-Thesis Option (p. 394)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major

or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

Students enrolled in the distance education MS thesis option must have an approved distance co-chair at their location.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to

the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 394)
- Continuous Registration (p. 394)
- Time Limit (p. 394)
- Foreign Languages (p. 394)
- Application for Degree (p. 394)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such

a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Students enrolled in a distance education MS in Plant Breeding do not have any residence requirement.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Plant Breeding

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 396)
- Degree Plan (p. 396)
- Transfer of Credit (p. 397)
- Research Proposal (p. 397)
- Examinations (p. 397)
 - Preliminary Examination (p. 397)
 - Preliminary Examination Format (p. 397)
 - Preliminary Examination Scheduling (p. 398)
 - Report of Preliminary Examination (p. 398)
 - Retake of Failed Preliminary Examination (p. 398)
 - Final Examination (p. 398)
 - Report of Final Examination (p. 399)
- Dissertation (p. 399)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

Students enrolled in the distance education PHD in Plant Breeding must have an approved distance co-chair at their location.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members

located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes

can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

On-Campus and Distance Education Degree Programs

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

On-Campus and Distance Education Degree Programs

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

On-Campus and Distance Education Degree Programs

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree

program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members

of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,

2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

On-Campus and Distance Education Degree Programs

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 399)
- Time Limit (p. 400)
- Continuous Registration (p. 400)
- Admission to Candidacy (p. 400)
- Languages (p. 400)
- 99-Hour Cap on Doctoral Degree (p. 400)
- Application for Degree (p. 401)

Residence

On-Campus Degree Program

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

Students enrolled in a distance education PHD in Plant Breeding do not have any residence requirement.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

On-Campus and Distance Education Degree Programs

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

On-Campus and Distance Education Degree Programs

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

On-Campus and Distance Education Degree Programs

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research

- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Soil Science

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 401)
- Degree Plan (p. 402)
- Credit Requirements (p. 402)
- Transfer of Credit (p. 402)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 403)
- Thesis Option (p. 403)
 - Thesis Proposal (p. 403)
 - Final Examination/Thesis Defense (p. 403)
- Non-Thesis Option (p. 404)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 404)
- Continuous Registration (p. 404)
- Time Limit (p. 405)
- Foreign Languages (p. 405)
- Application for Degree (p. 405)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Soil Science

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 406)
- Degree Plan (p. 406)
- Transfer of Credit (p. 407)
- Research Proposal (p. 407)
- Examinations (p. 407)
 - Preliminary Examination (p. 407)
 - Preliminary Examination Format (p. 407)
 - Preliminary Examination Scheduling (p. 408)
 - Report of Preliminary Examination (p. 408)
 - Retake of Failed Preliminary Examination (p. 408)
 - Final Examination (p. 408)
 - Report of Final Examination (p. 409)
- Dissertation (p. 409)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 409)
- Time Limit (p. 410)
- Continuous Registration (p. 410)
- Admission to Candidacy (p. 410)
- Languages (p. 410)
- 99-Hour Cap on Doctoral Degree (p. 410)
- Application for Degree (p. 411)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Regulatory Science in Food Systems - Certificate

Graduate Certificate in Regulatory Science in Food Systems prepares professionals to meet the challenges of the 21st century food and feed supply chain. The 12-credit hour fully online certificate is offered at a distance by faculty who are regulatory professionals and impart their knowledge on creating tools, standards, and practices to improve the compliance and protection of food systems. Students who complete the certificate have the knowledge and skills to interpret U.S. and international regulatory guidelines and standards, assess the impact of existing and emerging regulations on business operations, establish practical strategies for compliance and reporting, lead regulatory reviews, conduct a risk assessment and navigate an increasingly complex regulatory environment.

Applicants must have an accredited bachelor's degree and meet admission requirements for graduate study at Texas A&M University. For more information, please contact a graduate advisor in the Department of Soil & Crop Sciences (<http://regsci.tamu.edu/>).

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------|-------------------------------------------------|-----------------------|
| Select four of the following: | | 12 |
| SCSC 634 | Regulatory Science Principles | |
| SCSC 635/ AGECE 639 | Comparative Global Standards in Food Systems | |
| SCSC 636 | Regulatory Science: Methodology in Food Systems | |
| SCSC 629/ VTMI 629 | Laboratory Quality Systems | |
| AGECE 638 | Managerial Economics for Regulatory Science | |
| Total Semester Credit Hours | | 12 |

Department of Wildlife and Fisheries Sciences

wfsc.tamu.edu

Head: David Caldwell

Graduate Advisor: L. Hutchins

Graduate programs of study and research lead to the MS and PhD degrees in Wildlife and Fisheries Sciences. These programs prepare students for careers with academic institutions, governmental agencies and private business/industry. Studies in environmental conservation and education are available to those students interested in preparing themselves for public service in a number of fields other than research

and management. The non-thesis Master of Wildlife Science and Master of Natural Resource Development degree programs are designed to give students broad academic training combined with practical experience, to develop problem-solving and management skills. The MS (thesis option) and PhD degrees require a strong background in the basic and applied agricultural and life sciences, particularly as they relate to whole-organism biological systems. The latter two degrees involve intensive research, and the resulting thesis or dissertation must demonstrate a superior knowledge and understanding of the subject area.

Graduate study in the Department of Wildlife and Fisheries Sciences normally requires some breadth in several disciplines, which differ among courses of study and are dependent on candidate background. The academic program of study is tailored to the background and educational goals of each degree candidate in consultation with his or her Graduate Advisory Committee. There are no foreign language requirements for any of the department's graduate degree programs, unless set by the student's Advisory Committee or the University.

Research activities in the department involve vertebrates, invertebrates, plants and natural-resource systems, and span the broad fields of wildlife ecology and management, fisheries ecology and management, aquaculture, biodiversity and systematics, conservation education/ museum science and the human dimensions of wildlife and fisheries resource management. Research in these fields is supported by disciplinary expertise in aut- and synecology, evolutionary biology, resource sociology, animal behavior, physiology, animal diseases and parasitology, bioenergetics, nutrition, genetics, and systems analysis and modeling. Although much of the research program is without geographic bounds, the more site-specific aspects of the program focus on Texas, Mexico and the neotropics.

Facilities for research and graduate education include over forty laboratories with modern and sophisticated scientific instrumentation; an NSF-sponsored Center for Biosystematics and Biodiversity; the Biodiversity Research and Teaching Collections, which is among the largest collections of animals and genetic tissues in the New World; the Marine Mammal Research Facilities at Galveston; and an Aquacultural Research and Teaching Facility (laboratory and ponds) devoted to study of fish and invertebrate production for food and sport fishing. Field studies may be conducted at the Texas A&M University System's off-campus research and extension centers. Texas A&M is a member of the Archbold Tropical Research Center on the Caribbean island of Dominica. Graduate students are eligible to apply for usage of laboratory and field facilities at both of these locations.

Some faculty members in the Department of Wildlife and Fisheries Sciences have appointments on the intercollegiate faculties of Genetics, Ecology, Nutrition and Toxicology; graduate students are eligible to seek degrees in those areas. The department also encourages interdisciplinary research efforts with other departments, and within the Institutes of Marine Life Sciences and Renewable Natural Resources.

The Department of Wildlife and Fisheries Sciences has a residency requirement for all MS and PhD students. Master of Science students must complete, on the campus at College Station, 9 credit hours during one semester. Students who enter the doctoral degree programs with baccalaureate degrees must spend four semesters, of 9 hours each, on the campus at College Station. Students who hold master's degrees when they enter doctoral degree programs must spend two semesters, of 9 hours each, in resident study on the campus. A semester may be fall, spring, a 10-week summer semester, or two 5-week summer terms. Full-time staff members of the University or of closely affiliated

organizations stationed on the campus at College Station may fulfill residency requirements by completion of less-than-full course loads. Any exception to these rules must be approved in writing by the department head and the Office of Graduate and Professional Studies.

Faculty

Barboza, Peregrine S, Professor
Wildlife & Fisheries Sciences
PHD, University of New England, 1991

Bixler, Richard P, Lecturer
Wildlife & Fisheries Sciences
PHD, Colorado State University, 2014

Conway, Kevin W, Associate Professor
Wildlife & Fisheries Sciences
PHD, Saint Louis University, 2010

Dewitt, Thomas J, Associate Professor
Wildlife & Fisheries Sciences
PHD, State University of New York - Binghamton, 1996

Dronen Jr, Norman O, Professor
Wildlife & Fisheries Sciences
PHD, New Mexico State University, 1974

Fitzgerald, Lee A, Professor
Wildlife & Fisheries Sciences
PHD, University of New Mexico, 1993

Fujiwara, Masami, Associate Professor
Wildlife & Fisheries Sciences
PHD, Massachusetts Inst of Technology, 2002

Gatlin III, Delbert M, Professor
Wildlife & Fisheries Sciences
PHD, Mississippi State University, 1983

Grace, Jacquelyn K, Assistant Professor
Wildlife & Fisheries Sciences
PHD, Wake Forest University, 2014

Grant, William E, Professor
Wildlife & Fisheries Sciences
PHD, Colorado State University, 1974

Hibbitts, Toby J, Lecturer
Wildlife & Fisheries Sciences
PHD, University of the Witwatersrand, 2006

Hurtado Clavijo, Luis A, Associate Professor
Wildlife & Fisheries Sciences
PHD, Rutgers, 2002

Lacher Jr, Thomas E, Professor
Wildlife & Fisheries Sciences
PHD, University of Pittsburgh, 1980

Light, Jessica E, Associate Professor
Wildlife & Fisheries Sciences
PHD, Louisiana State University, 2005

Mateos, Mariana, Associate Professor
Wildlife & Fisheries Sciences
PHD, Rutgers, 2002

Mora-Zacarias, Miguel A, Professor
Wildlife & Fisheries Sciences
PHD, University of California, Davis, 1990

Morrison, Mike L, Professor
Wildlife & Fisheries Sciences
PHD, Oregon State University, 1982

Perkin, Joshua S, Assistant Professor
Wildlife & Fisheries Sciences
PHD, Kansas State University, 2012

Roelke, Daniel L, Professor
Wildlife & Fisheries Sciences
PHD, Texas A&M University, 1997

Silvy, Nova J, Professor
Wildlife & Fisheries Sciences
PHD, Southern Illinois University, 1975

Voelker, Gary A, Professor
Wildlife & Fisheries Sciences
PHD, University of Washington, 1998

Winemiller, Kirk O, Professor
Wildlife & Fisheries Sciences
PHD, University of Texas, 1987

Yorzinski, Jessica L, Assistant Professor
Wildlife & Fisheries Sciences
PHD, University of California Davis, 2012

Masters

- Master of Natural Resources Development in Natural Resources Development (p. 412)
- Master of Science in Wildlife and Fisheries Sciences (p. 415)
- Master of Wildlife Science in Wildlife Science (p. 425)

Doctoral

- Doctor of Philosophy in Wildlife and Fisheries Sciences (p. 419)

Certificates

- Military Land Sustainability Certificate (p. 428)

Master of Natural Resources Development in Natural Resources Development

The **Master of Natural Resources Development (MNRD)** degree is designed for a student who wants professional graduate training with a management orientation in natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

Individuals with a baccalaureate degree from a college or university of recognized standing, or qualified Texas A&M University seniors

during their last semester, may apply for admission to graduate studies to pursue the non-thesis degree of Master of Natural Resources Development. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending upon departmental requirements.

The degree may be earned in the Departments of Ecosystem Science and Management, Recreation, Park and Tourism Sciences, and Wildlife and Fisheries Sciences in the College of Agriculture and Life Sciences. It is possible for working professionals to earn this degree via distance education.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 413)
- Degree Plan (p. 413)
- Credit Requirement (p. 413)
- Transfer of Credit (p. 414)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 414)
- Final Examination (p. 414)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the

Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or record of study and is registered for 684 or 693 courses, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus Degree Program

A minimum of 36 hours is required for the Master of Natural Resources Development degree.

Distance Education Degree Program

The minimum requirements for the degree are 36 hours of distance-based coursework. Explore the list of online courses on the MNRD course offerings page (<https://essm.tamu.edu/academics/graduate/prospective/degrees/mnrd-distance/distance-courses>).

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies.

Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work.** Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Distance Education Degree Program

The distance education modality allows a maximum of 9 hours of 300 or 400 level undergraduate transfer courses. See above for other transfer credit policies.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply.
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 693 (Professional Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held

prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as formally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Master of Natural Resources Development degree candidates do not qualify to petition for an exemption from their final examination. Students in the distance program must also prepare a professional paper and participate in a final examination. This may be written, oral, or both, with an option to have a virtual oral examination.

Additional Requirements

Additional Requirements

- Residence (p. 415)
- Time Limit (p. 415)
- Foreign Languages (p. 415)
- Application for Degree (p. 415)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Natural Resources Development degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

A foreign language is not required for the Master of Natural Resources Development degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Wildlife and Fisheries Sciences

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 416)

Degree Plan (p. 417)

Credit Requirements (p. 417)

Transfer of Credit (p. 417)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 417)

Thesis Option (p. 418)

- Thesis Proposal (p. 418)

- Final Examination (p. 418)

Non-Thesis Option (p. 419)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is

involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades**

(A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu/>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 419)
- Continuous Registration (p. 419)
- Time Limit (p. 419)
- Foreign Languages (p. 419)
- Application for Degree (p. 419)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Wildlife and Fisheries Sciences

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 421)
- Degree Plan (p. 421)
- Transfer of Credit (p. 421)
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- Dissertation (p. 424)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable)

and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- All English language proficiency requirements are satisfied.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or

Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically

designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 424)
- Time Limit (p. 424)
- Continuous Registration (p. 424)
- Admission to Candidacy (p. 424)
- Languages (p. 425)
- 99-Hour Cap on Doctoral Degree (p. 425)
- Application for Degree (p. 425)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691, 5V98 or 5V99 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 5V98 and 5V99, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Wildlife Science in Wildlife Science

The **Master of Wildlife Science (MWSC)** degree is designed for a student who wants professional graduate training with a management or policy orientation in wildlife or natural resources. It is intended to emphasize the problem solving skills involved in the use of science and technology to benefit humanity, not as a research degree.

An individual with a baccalaureate degree from a college or university of recognized standing or qualified Texas A&M University seniors during his/her last semester may apply for admission to graduate studies to pursue the non-thesis degree of Master of Wildlife Science. The candidate's advisory committee shall specify prerequisite work where necessary.

The student must demonstrate problem solving capabilities. Degree candidates may gain such capabilities by completing a professional internship that is designed to provide meaningful, applied, practical experiences, and which may vary in duration from three to nine months depending on departmental requirements.

It is possible for working professionals to fulfill the degree requirements for the Master of Wildlife Science via distance education. The degree may be earned in the Department of Wildlife and Fisheries Sciences.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 425)

Degree Plan (p. 426)

Credit Requirements (p. 426)

Transfer of Credit (p. 426)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 426)

Final Examination (p. 427)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the

committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus Degree Program

A minimum of 36 hours is required for the Master of Wildlife Science degree.

Distance Education Degree Program

The minimum requirements for the degree are 36 hours of coursework.

Transfer of Credit

On-Campus Degree Program

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.**

Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Distance Education Degree Program

The distance education modality allows a maximum of 9 hours of 300 or 400 level undergraduate transfer courses.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses

would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685, 690 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), or
 - Up to 3 hours of 693 (Professional Studies).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies a minimum of 10 working days in advance of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A professional paper, which is a scholarly report of a problem solving nature, will be prepared by each student. The professional paper must

be submitted to the student's advisory committee for approval prior to the final examination. The final examination will cover all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Master of Wildlife Science degree candidates do not qualify to petition for an exemption from their final examination.

Additional Requirements

Additional Requirements

- Residence (p. 427)
- Time Limit (p. 427)
- Foreign Languages (p. 428)
- Application for Degree (p. 428)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Wildlife Science degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

A foreign language is not required for the Master of Wildlife Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Military Land Sustainability - Certificate

The certificate in Military Land Sustainability is a web-based program that provides students with an understanding of factors that influence natural resource conservation and management of military lands. The program is comprised of coursework in three integrated, multidisciplinary thematic areas of emphasis: land management, policy analysis and development, and cultural competencies and conflict management. The Certificate in Military Land Sustainability can complement existing professional graduate degrees offered in the Departments of Ecosystem Sciences and Management (ESSM) and Wildlife and Fisheries Sciences (WFSC).

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------|-------------------------------------------------------|-----------------------|
| Required Courses | | |
| WFSC 641 | Sustainable Military Land Management | 3 |
| WFSC 642 | Field Military Land Management ¹ | 1 |
| WFSC 644 | Wildlife and Natural Resource Policy | 3 |
| Prescribed Elective Courses | | |
| Select two of the following: | | 6 |
| ESSM 610 | Rangeland Resource Management | |
| ESSM 630 | Restoration Ecology | |
| ESSM 635 | Ecohydrology | |
| ESSM 636 | Wildland Watershed Management | |
| ESSM 651 | Geographic Information System for Resource Management | |
| ESSM 652 | Advanced Topics in Geographic Information Systems | |
| ESSM 660 | Landscape Analysis and Modeling | |
| ESSM 676/ | Leadership, Development and | |
| REN 650 | Management of Environmental NGOs | |
| WFSC 604 | Ecological Modeling | |
| WFSC 613 | Animal Ecology | |
| WFSC 618 | Wildlife Study Design and Analysis | |
| WFSC 624 | Dynamics of Populations | |

WFSC 630 Ecology and Society

WFSC 636 Wildlife Habitat Management

WFSC 684 Professional Internship

Total Semester Credit Hours

13

¹ WFSC 642 may be substituted by WFSC 684 with the prior approval of Administrative Director of the program for the 1 credit hour required.

College of Architecture

<http://www.arch.tamu.edu>

Administrative Officers

Dean - Jorge A. Vanegas, Ph.D.

Executive Associate Dean - Dawn Jourdan, Esq., Ph.D., AICP

Associate Dean for Outreach and Diversity - Cecilia Guisti, Ph.D.

Associate Dean for Academic Affairs - Leslie H. Feigenbaum, M.S.

Associate Dean for International Programs - Elton Abbott, D.E.D.

Assistant Dean for Finance and Administration - Chris Novosad, M.B.A.

Departments

Departments

Architecture (p. 431)

Construction Science (p. 446)

Landscape Architecture and Urban Planning (p. 451)

Visualization (p. 469)

Interdepartmental Programs

- Environmental Hazard Management Certificate (p. 428)
- Facility Management Certificate (p. 430)

Interdisciplinary

- Health Systems and Design Certificate (p. 146)

Interdepartmental Programs

- Environmental Hazard Management Certificate (p. 428)
- Facility Management Certificate (p. 430)

Interdisciplinary

- Health Systems and Design Certificate (p. 146)

Environmental Hazard Management - Certificate

This cross-disciplinary program is housed in the College of Architecture and is designed to provide a student with an understanding of the interrelationship between the built environment and extreme events in the natural environment, including hazard mitigation, preparedness, response, and recovery. It is appropriate for students who want to contribute to making the built environment more resilient to impacts from natural disasters and climate change. The program consists of a series of

courses that are open to students from any graduate degree program at Texas A&M University.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------|-------------------------------------------------------------------------------|-----------------------|
| PLAN 647 | Disaster Recovery and Hazard Mitigation | 3 |
| Select two of the following: | | 6 |
| PLAN 634 | Environmental Health Policy and Planning | |
| PLAN 635/ LAND 635 | Concepts in Ecological Planning and Design | |
| PLAN 641 | Problems of Environmental Planning Administration | |
| PLAN 642 | Planning for Coastal Sustainability and Resiliency | |
| PLAN 649 | Organizational and Community Response to Crises and Disasters | |
| PLAN 650 | Disaster Response Planning | |
| PLAN 689 | Special Topics in... (must be a hazard/disaster related special topic course) | |
| Select two of the following: ¹ | | 6 |
| ARCH 622 | Sustainable Building Design Technology | |
| ATMO 629 | Climate Change | |
| COMM 638 | Crisis Communication | |
| COSC 663 | Sustainable Construction | |
| CVEN 610/ PHEO 650 | Environmental Risk Assessment | |
| CVEN 624 | Infrastructure Engineering and Management | |
| CVEN 642/ BAEN 642 | Water-Energy-Food Nexus: Toward a Sustainable Resource Management | |
| CVEN 657 | Dynamic Loads and Structural Behavior | |
| CVEN 664 | Water Resources Engineering Planning and Management | |
| CVEN 669 | Design of Structures for Hazardous Environmental Loads | |
| CVEN 682 | Environmental Remediation of Contaminated Sites | |
| ESSM 624 | Terrestrial Ecosystems and Global Change | |
| ESSM 626 | Fire and Natural Resources Management | |
| ESSM 631 | Ecological Restoration of Wetland and Riparian Systems | |
| ESSM 633 | Coastal Processes and Ecosystem Management | |
| ESSM 636 | Wildland Watershed Management | |
| ESSM 660 | Landscape Analysis and Modeling ² | |
| ESSM 663/ SCSC 663 | Applied Spatial Statistics ² | |
| GEOG 612 | Applied Climatology | |

| | |
|-----------------------|------------------------------------------------------------------------|
| GEOG 616 | Urban Geography |
| GEOG 619 | Human Impact on the Environment |
| GEOG 621 | Land-Use and Land-Cover Change |
| GEOG 625/ ENTO 625 | Landscape Ecology |
| GEOG 634/ WMHS 601 | Hydrology and Environment |
| GEOG 660 | Applications in GIS ² |
| GEOG 665 | GIS-Based Spatial Analysis and Modeling ² |
| GEOG 676 | GIS Programming ² |
| GEOL 633 | River Restoration |
| HLTH 609 | Applied Epidemiology |
| HLTH 629 | Environmental Health |
| HLTH 631 | Community and Public Health |
| HPCH 604 | Social Ecology and Global Health |
| HPCH 625 | Health of Refugees and Displaced Populations |
| INTA 635 | Great Famines, War and Disaster Response |
| INTA 639 | Homeland Security and Emergency Management |
| MARS 610 | Environmental Law |
| MARS 625 | GIS Use in Coastal Resources ² |
| MARS 626 | Advanced GIS for Coastal Systems ² |
| MARS 635 | Environmental Impact Statements and Natural Resource Damage Assessment |
| MARS 640 | Environmental Administrative Law |
| MARS 652 | Sustainable Management of Coastal Margins |
| MARS 655 | Wetlands Management |
| MARS 675 | Environmental Management Strategies |
| MARS 676 | Environmental Policy |
| OCEN 672 | Coastal Engineering |
| PHEB 605 | Epidemiologic Methods I ² |
| PHEB 606 | Survival Analysis ² |
| PHEB 607 | Sample Survey Methodology ² |
| PHEB 613 | Field Epidemiology Methods ² |
| PHEB 614 | Analysis of Longitudinal and Multilevel Data ² |
| PHEB 615 | Disaster Epidemiology |
| PHEB 618 | Spatial Epidemiology ² |
| PHEB 624 | Social Epidemiology |
| PHEB 626 | Occupational And Environmental Epidemiology |
| PHEO 610 | Toxicology in Public Health |
| PHEO 611 | Environmental Health Assessment |
| PHEO 612 | Global Environmental Health |
| PHEO 613 | Introduction to Environmental Health Disparities |

| | | |
|-----------------------------|-------------------------------------------------------------------------------|----|
| PHEO 614/ SCSC 614 | Biodegradation and Bioremediation | |
| PHEO 615 | Environmental Measurement | |
| PHEO 625 | Environmental and Occupational Health Survey Methods ² | |
| PHEO 639 | Hazardous Materials Management and Compliance | |
| PHEO 650 | Risk Assessment I | |
| PHEO 676 | Environmental Sustainability and Public Health | |
| PHPM 642 | Public Health Emergency Preparedness Policy Issues | |
| PHPM 644 | Texas Training Initiative For Emergency Response (T-Tier) | |
| PLAN 625 | Geographical Information Systems in Landscape and Urban Planning ² | |
| PLAN 626 | Advanced GIS in Landscape Architecture and Urban Planning ² | |
| RENK 650/ ESSM 676 | Leadership Development and Management of Environmental NGOs | |
| RENK 659 | Ecological Economics | |
| RENK 660/ ESSM 672 | Environmental Impact Analysis for Renewable Natural Resources | |
| SENG 660 | Quantitative Risk Analysis | |
| SENG 677 | Fire Protection Engineering | |
| SOCI 617 | Comparative Racial-Ethnic Relations | |
| SOCI 647 | Seminar in Demography and Human Ecology | |
| SOCI 660 | Theories of Race and Ethnic Group Relations | |
| SOCI 661/ WGST 661 | Sociology of Gender | |
| SOCI 662 | Racism and Anti-Racism | |
| SOPH 602 | Investigation and Control: Acute Public Health Events | |
| Total Semester Credit Hours | | 15 |

¹ No more than three credit hours from research methods courses can count toward the EHM certificate.

² Research methods course.

The student must complete a professional study, thesis, or dissertation with an EH focus approved by the EHM Certificate Advisory Council. This project is submitted to the EHM Certificate Coordinator for review & approval by the committee.

Facility Management - Certificate

This certificate program, while housed in the College of Architecture, provides a student in any graduate degree program at Texas A&M University an opportunity to develop a body of knowledge in facility management that will further his/her career goals. The certificate assumes that facility management is a cross-disciplinary field. The program is designed to ensure that a student gains a sense of mutual

respect for others in the field, and appropriate awareness, understanding, and ability within a specific body of knowledge.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------------------|---------------------------------------------------------|-----------------------|
| Required | | |
| COSC 670 | Facilities Asset Management | 3 |
| Capstone | | |
| Select one of the following: | | 3 |
| ARCH 608 | Architectural Design IV | |
| COSC 693 | Professional Study | |
| LDEV 693 | Professional Study | |
| Electives | | |
| Select three of the following: ¹ | | 9 |
| Operations and Maintenance Track: | | |
| ARCH 619 | Applied Solar Energy | |
| ARCH 621 | Energy Optimization in Building Design | |
| ARCH 633 | Applied Architectural Systems | |
| ARCH 634 | Architectural Lighting | |
| MEEN 436 | Principles of Heating, Ventilating and Air Conditioning | |
| MEEN 437 | Principles of Building Energy Analysis | |
| MEEN 664 | Energy Management in Commercial Buildings | |
| MEEN 665 | Application of Energy Management | |
| Finance and Real Estate Track: | | |
| LDEV 661 | Development and the Environment | |
| LDEV 664 | Market Analysis for Development | |
| LDEV 667 | Design and Development Economy | |
| ACCT 640 | Accounting Concepts and Procedures I | |
| FINC 635 | Survey of Finance | |
| FINC 672 | Real Property Finance | |
| Planning, Project Management Technology Track: | | |
| COSC 620 | Construction Company Operations | |
| COSC 621 | Advanced Project Management | |
| COSC 622 | Construction Economics | |
| COSC 642 | Construction Information Technology | |
| LDEV 663 | Introduction to Project Management | |
| MGMT 630 | Behavior in Organizations | |
| MGMT 655 | Survey of Management | |
| Human and Environmental Factors Track: | | |
| ARCH 646 | Historic Preservation Theory and Practice | |
| ARCH 660 | Design Programming | |
| ARCH 663 | Interior Architecture | |
| ARCH 676 | Survey of Human Behavior and Design | |

Internships:

ARCH 684 Professional Internship

COSC 684 Professional Internship

Total Semester Credit Hours 15

- ¹ At least three (3) credit hours of course work with facility management content MUST be from outside the student's major field.

Students must complete a capstone Professional Study or Thesis with a Facility Management focus that is approved by the Facility Management Certificate Council.

Department of Architecture

<http://dept.arch.tamu.edu>

Interim Head: R. B. Warden

The Department of Architecture offers the following graduate degree programs for eligible students seeking advanced educational opportunities: Master of Architecture as the professional degree accredited by NAAB, Master of Science in Architecture and Doctor of Philosophy. Entry to the MArch is directly from a pre-architectural four-year degree program, or with appropriate prerequisite work (Career Change Program), from other 4-year degree backgrounds.

The Department of Architecture offers specialization certificates in Health Systems & Design, Historic Preservation, Environmental Hazard Management, Facility Management, Sustainable Urbanism and Transportation Planning. These areas of specialization are supported by qualified faculty, research centers and laboratories. Other areas of exploration in which graduate students are engaged include design, architectural computing, history and theory, energy and sustainability, housing, health and interior architecture. The program also offers two dual master's degree program in conjunction with the graduate program in Land and Property Development and Urban Planning that enables students to graduate with a Master of Architecture and Master of Land and Property Development and Master of Architecture and Master of Urban Planning upon completion of the combined 72-credit core curriculum.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Texas A&M University, Department of Architecture offers the following NAAB-accredited degree program:

MArch (pre-professional degree + 52 graduate credits)

Next accreditation visit for all programs: 2022

Because of the important role of computing the disciplines housed within the College of Architecture, all entering students are required to possess a portable, network-ready personal computer capable of running software appropriate to their academic program. Financial aid is available to assist students in their computer purchases. No student will be denied admission to Texas A&M University based on inability to purchase a computer. Additional information is available on the college website at <http://arch.tamu.edu>.

Faculty

Abbott Jr, Elton D, Associate Professor of the Practice
Architecture
PHD, Texas A&M University, 1983

Aitani, Koichiro, Associate Professor
Architecture
PHD, Kyushu University, 2015
MAR, Virginia Polytechnic Institute and State University, 1997

Ali, Ahmed K, Assistant Professor
Architecture
PHD, Virginia Polytechnic Institute, 2012

Baltazar, Juan Carlos, Associate Professor
Architecture
PHD, Texas A&M University, 2006

Beltran, Liliana O, Associate Professor
Architecture
PHD, University of California - Berkeley, 1997

Borges Gonzalez, Alejandro, Assistant Professor
Architecture
MAR, Cornell University, 1994

Caffey, Stephen M, Instructional Assistant Professor
Architecture
PHD, The University of Texas at Austin, 2008

Campagnol Abuabara, Gabriela, Lecturer
Architecture
PHD, University of Sao Paulo - USP, 2008

Clayton, Mark J, Professor
Architecture
PHD, Stanford University, 1998
MAR, University of California at Los Angeles, 1987

Culp III, Charles H, Professor
Architecture
PHD, Iowa State University, 1976

Ermey Castillo, Marcel, Associate Professor of the Practice
Architecture
PHD, Central University of Venezuela, 1987

Esquivel, Jose G, Associate Professor
Architecture
MAR, Ohio State University, 1998

Faulkner, Matthew T, Visiting Lecturer
Architecture
MAR, Texas A&M University, 2006

Fortenberry, Brent R, Assistant Professor
Architecture
PHD, Boston University, 2013

Geva, Anat M, Professor
Architecture
PHD, Texas A&M University, 1995

Gibbs, Brian C, Visiting Lecturer
Architecture
MAR, Texas A&M University, 2006

Glowacki, Kevin T, Associate Professor
Architecture
PHD, Bryn Mawr College, 1991

Haberl, Jeff, Professor
Architecture
PHD, University of Colorado, 1986

Haliburton, James T, Lecturer
Architecture
PHD, Texas A&M University, 2016
MAR, Texas A&M University, 2014

Hamilton, Daniel Kirk, Professor
Architecture
PHD, Arizona State University, 2017

Hawkins, Andrew G, Visiting Lecturer
Architecture
MAR, University of Oregon, 1999

He, Weiling, Associate Professor
Architecture
PHD, Georgia Institute of Technology, 2005

Hill, Rodney C, Professor
Architecture
MAR, University of California - Berkeley, 1969

Holliday III, Ray W, Assistant Professor of the Practice
Architecture
MLA, Texas A&M University, 2000
MAR, Texas A&M University, 1992

Holliday, Shelley D, Associate Professor of the Practice
Architecture
MEN, Texas A&M University, 2001

Hsu, Frances, Visiting Assistant Professor
Architecture
DAR, ETH Zurich (Swiss Federal Institute of Technology, 2004
MAR, Harvard University Graduate School of Design, 1985

Jain, Priya, Assistant Professor
Architecture
MAR, The University of Arizona, 2007

Kim, Hyounsub, Visiting Lecturer
Architecture
PHD, Texas A&M University, 2017
MAR, University of Pennsylvania, 2012

Klein, Nancy L, Associate Professor
Architecture
PHD, Bryn Mawr College, 1991

Lopez, Marcelo F., Assistant Professor
Architecture
MS, Columbia University, New York, 2013

Lu, Zhipeng, Senior Lecturer
Architecture
PHD, Texas A&M University, 2009

Lutz, Shawn M, Visiting Assistant Professor
Architecture
MAR, Harvard University Graduate School of Design, 2011

Maffei, Gerald L, Visiting Professor
Architecture
MAR, University of California at Berkley, 1969

Mann, George J, Professor
Architecture
DVM, Columbia University, 1961

Miranda, Valerian, Associate Professor
Architecture
PHD, Texas A&M University, 1988
MAR, Texas A&M University, 1984

Nichols, Anne B, Associate Professor of the Practice
Architecture
PHD, University of Illinois, 2000

Obrien, Michael J, Professor
Architecture
MAR, Virginia Tech, 1982

Ostadalimakhmalbaf, Mohammadreza, Visiting Lecturer
Architecture
PHD, Texas A&M University, 2018

Pentecost III, Aubrey R, Professor of the Practice
Architecture
DrPH, University of Texas, School of Public Health, 1982

Rodiek, Susan D, Associate Professor
Architecture
PHD, Cardiff University, 2004

Rogers, Julia S, Senior Lecturer
Architecture
PHD, Texas A&M University, 1996

Stewart, Zachary D, Assistant Professor
Architecture
PHD, Columbia University, 2015

Tate, James Michael, Assistant Professor
Architecture
MAR, Yale Univeristy, 2007

Tripp, Andrew Reed, Assistant Professor
Architecture
PHD, University of Pennsylvania, 2017

Vahdat Zad, Vahid, Visiting Lecturer
Architecture
PHD, Texas A&M University, 2014

Vanegas, Jorge A, Professor
Architecture
PHD, Stanford University, 1988

Warden, Robert R, Professor
Architecture
MAR, Texas A&M University, 1986

Yan, Wei, Professor
Architecture
MAR, University of California - Berkeley, 2004

Zhu, Xuemei, Associate Professor
Architecture
PHD, Texas A&M University, 2008

Masters

- Master of Architecture in Architecture (p. 433)
- Master of Science in Architecture (p. 435)

Doctoral

- Doctor of Philosophy in Architecture (p. 439)

Certificates

- Historic Preservation Certificate (p. 445)

Master of Architecture in Architecture

The **Master of Architecture (MArch)** is a non-thesis degree and requires the completion of a minimum of 52 hours of coursework and a satisfactory comprehensive final examination. Holders of the Bachelor of Environmental Design (BED) degree from Texas A&M University and holders of other four-year pre-professional architectural degrees will enter the program directly, subject to admission approval by the department. Holders of other baccalaureate degrees will normally be required to complete a Career Change Program (a structured three-semester leveling sequence) to attain BED equivalency.

The Department of Architecture in the College of Architecture offers a program of graduate study intended to provide its graduates with the requisite educational background to enter the professional practice of architecture and its numerous variants and/or to prepare them for further graduate studies.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 433)
Degree Plan (p. 434)
Credit Requirement (p. 434)
Transfer of Credit (p. 434)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 434)
Final Examination (p. 434)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Committee Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the professional paper and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 52 semester credit hours of approved courses is required for the Master of Architecture degree. A student who is admitted to the Career Change Program will normally be required to complete a structured three-semester leveling sequence in addition to the 52 semester credit hours required for the degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. No more than 16 hours may be used in any combination of the following categories:
 - A maximum of 8 hours of 684 (Professional Internship); and/or
 - A maximum of 8 hours of 685 (Directed Studies), or
 - A maximum of 8 hours of 693 (Professional Studies), and
 - Up to 3 hours of 690 (Theory of Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 12 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses taken are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must** be submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination.. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his/her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A candidate for the Master of Architecture degree does not qualify to petition for an exemption from his/her final examination.

Additional Requirements

Additional Requirements

- Residence (p. 435)
- Time Limit (p. 435)
- Foreign Languages (p. 435)
- Internship or Practicum (p. 435)
- Application for Degree (p. 435)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Architecture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along

with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Architecture degree.

Internship or Practicum

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed. Departmental requirements and regulations related to degree plans, professional internships, etc., may be found in the departmental brochure. A student will not normally be permitted to undertake 684 (Professional Internship) as the final course in the sequence of study leading to the master's degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Architecture

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 436)
- Degree Plan (p. 437)
- Credit Requirements (p. 437)
- Transfer of Credit (p. 437)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 437)
- Thesis Option (p. 438)
 - Thesis Proposal (p. 438)
 - Final Examination/Thesis Defense (p. 438)
- Non-Thesis Option (p. 439)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 439)
- Continuous Registration (p. 439)
- Time Limit (p. 439)
- Foreign Languages (p. 439)
- Application for Degree (p. 439)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Architecture

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the

degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 441)
- Degree Plan (p. 441)
- Transfer of Credit (p. 441)
- Research Proposal (p. 442)
- Examinations (p. 442)
 - Preliminary Examination (p. 442)
 - Preliminary Examination Format (p. 442)
 - Preliminary Examination Scheduling (p. 442)

- Report of Preliminary Examination (p. 443)
- Retake of Failed Preliminary Examination (p. 443)
- Final Examination (p. 443)
- Report of Final Examination (p. 443)
- Dissertation (p. 444)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree.

Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 444)
- Time Limit (p. 444)
- Continuous Registration (p. 444)
- Admission to Candidacy (p. 444)
- Languages (p. 445)
- 99-Hour Cap on Doctoral Degree (p. 445)
- Application for Degree (p. 445)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Historic Preservation - Certificate

Based in the College of Architecture, the Certificate in Historic Preservation is open to students in a graduate degree program at Texas A&M University. This cross-disciplinary program draws on strong discipline-based academic programs that prepare graduates to further their career goals. The certificate assumes that historic preservation is a cross-disciplinary field, and the program is designed to ensure that students gain a sense of mutual respect for others in the field, and appropriate awareness, understanding, and ability within a specific body of knowledge.

Program Requirements

The student must complete a MINIMUM of fifteen (15) credit hours of coursework with historic preservation content. The courses MUST be applicable toward a graduate degree at Texas A&M University, but need not necessarily be included on the student's degree plan.

| Code | Title | Semester Credit Hours |
|----------------------------------------------------------|------------------------------------------------------------------|-----------------------|
| ARCH 646 | Historic Preservation Theory and Practice | 3 |
| Select 12 semester credit hours of the following: 1,2 | | 12 |
| Architecture: | | |
| ARCH 608 | Architectural Design IV | |
| ARCH 644 | Seminar in Art and Architectural History ³ | |
| ARCH 647 | Recording Historic Buildings | |
| ARCH 648 | Building Preservation Technology | |
| ARCH 649 | Advanced History of Building Technology | |
| ARCH 659 | Digital Architectural Photography | |
| ARCH 691 | Research | |
| Construction Science: | | |
| COSC 689 | Special Topics in... ³ | |
| Landscape Architecture and Urban Planning: | | |
| LAND 691 | Research | |
| LAND 693 | Professional Study | |
| LDEV 671 | Sustainable Development | |
| PLAN 625 | Geographical Information Systems in Landscape and Urban Planning | |
| PLAN 640 | Law and Legislation Related to Planning | |
| PLAN 689 | Special Topics in... ³ | |
| PLAN 691 | Research | |
| PLAN 693 | Professional Study | |
| Anthropology: | | |

| | |
|--------------------------------|---------------------------------------------|
| ANTH 605 | Conservation of Archaeological Resources I |
| ANTH 606 | Conservation of Archaeological Resources II |
| ANTH 608 | Skills in Maritime Archaeology |
| ANTH 645 | Cultural Resources Management |
| ANTH 691 | Research |
| Geography: | |
| GEOG 605 | Processes in Cultural Geography |
| GEOG 691 | Research |
| Recreation, Parks and Tourism: | |
| RPTS 307 | Methods of Environmental Interpretation |
| RPTS 646 | Heritage Tourism |
| RPTS 691 | Research |
| RPTS 693 | Professional Study |
| Total Semester Credit Hours | |
| 15 | |

- ¹ At least three (3) credit hours of coursework with historic preservation content MUST be from outside the student's major field.
- ² The student must complete a Professional Study, Professional Paper, Thesis, or Dissertation with a significant historic preservation content.
- ³ May be counted towards the certificate if topic is related to Historic Preservation education and is approved by Director of the Center for Heritage Conservation

Must complete a Professional Study, Professional Paper, Thesis, or Dissertation with a significant historic preservation content.

Must participate in a colloquium to communicate the historic preservation content of the completed Professional Study, Professional Paper, Thesis, or Dissertation to be evaluated by the Director and Certificate Committee of the Center for Historic Preservation.

Department of Construction Science

Head: Dr. Patrick Suermann

Graduate Coordinator: Dr. Phil Lewis

The Master of Science in Construction Management program is an advanced curriculum focusing on research in areas related to construction management. Students will develop a specialization through coursework in their fields of interest. The program is augmented with classes in business administration, engineering, architecture, and other support areas as appropriate for specialization development.

A minimum body of knowledge is required as a prerequisite of admission for students without an appropriate degree or substantial professional experience.

The program has a 32 credit hours thesis option or a 36 credit hour non-thesis option.

Because of the important role of computing in the disciplines housed within the College of Architecture, all entering students are required to possess a portable, network-ready personal computer capable of running software appropriate to their academic program. No student will be denied admission to Texas A&M University based on inability to

purchase a computer. Additional information is available on the College of Architecture website.

This program offers a dual master's degree program with the graduate programs in Construction Management and in Land and Property Development that enables students to graduate with a Master of Science in Construction Management and a Master in Land and Property Development upon completion of the combined 68 credit hour (with thesis) core curriculum. A student must be admitted into both the graduate program in Construction Management and the graduate program in Land and Property Development before completion of this dual degree program.

Faculty

Ahn, Changbum R, Associate Professor
Construction Science
PHD, University of Illinois at Urbana-Champaign, 2012

Behzadan, Amir H, Associate Professor
Construction Science
PHD, University of Michigan, 2008

Bryant, John A, Associate Professor
Construction Science
PHD, Texas A&M University, 1995

Carlson, Kimberly A, Senior Lecturer
Construction Science
MAR, Texas A&M University, 2002

Choi, Kunhee, Associate Professor
Construction Science
PHD, University of California at Berkeley, 2008

Daigneault, Melissa S, Visiting Lecturer
Construction Science
JD, Wake Forest University School of Law, 2003

Dixit, Manish K, Assistant Professor
Construction Science
PHD, Texas A&M University, 2013

Ellis, Debra R, Senior Lecturer
Construction Science
JD, Baylor University, 1993

Escamilla Jr, Edelmiro E, Instructional Associate Professor
Construction Science
PHD, Texas A&M University, 2011
MAR, Texas A&M University, 2002

Feigenbaum, Leslie H, Senior Lecturer
Construction Science
MS, Texas A&M University, 1985

Fernandez-Solis, Jose L, Instructional Associate Professor
Construction Science
PHD, Georgia Institute of Technology, 2006

Grisham, Ray F, Lecturer
Construction Science
JD, University of Texas at Austin, 1972

Ham, Youngjib, Assistant Professor
Construction Science
PHD, University of Illinois at Urbana-Champaign, 2015
MAR, Seoul National University, Korea, 2011

Haque, Mohammed E, Professor
Construction Science
PHD, New Jersey's Science & Technology University, 1995

Jeong, Hyungseok David, Professor
Construction Science
PHD, Purdue University, 2005

Kang, Ho-Yeong, Associate Professor
Construction Science
PHD, Texas A&M University, 2001

Lavy, Sarel, Professor
Construction Science
PHD, Technion - Israel Institute of Technology, Israel, 2006

Lewis, Michael P, Associate Professor
Construction Science
PHD, North Carolina State University, 2009

Nichols, John M, Associate Professor
Construction Science
PHD, University of Newcastle, Australia, 2002

Rodgers, William S, Clinical Professor
Construction Science
JD, Texas Tech University, 1978

Rybkowski, Zofia K, Associate Professor
Construction Science
PHD, University of California - Berkeley, 2009
MAR, Harvard University, 1991

Ryoo, Boong Y, Associate Professor
Construction Science
PHD, University of Wisconsin - madison, 1995

Suermann, Patrick C, Associate Professor
Construction Science
PHD, University of Florida, 2009

Williamson, Kenneth C, Associate Professor
Construction Science
PHD, University of Oklahoma, 1994

Masters

- Master of Science in Construction Management (p. 447)

Master of Science in Construction Management

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 448)
- Degree Plan (p. 448)
- Credit Requirements (p. 449)
- Transfer of Credit (p. 449)
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Student's Advisory Committee

Admissions to the MSCM program occurs in part when graduate faculty agree to work with an applicant. As such, applicants are assigned a faculty member who will be the chair of their advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other

graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 5V98, 5V99, 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the Master of Science degree.

If a student opts to include a summer internship in their degree plan, 34 semester credit hours are completed.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 5V98, 5V99, and 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree.

The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English Language Proficiency requirements must be satisfied prior to scheduling the examination. If applicable, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. Examinations which are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

The final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to

review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

A candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 450)
- Continuous Registration (p. 450)
- Time Limit (p. 450)
- Foreign Languages (p. 451)
- Application for Degree (p. 451)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Landscape Architecture and Urban Planning

<http://laup.arch.tamu.edu>

Head: Shannon Van Zandt

The Department of Landscape Architecture and Urban Planning in the College of Architecture offers degrees in three distinct but related disciplines that take you all the way from working with community residents to envision their future to literally laying the groundwork for a new urban place. It is the only department of its kind in the nation—no place else offers this unique combination of disciplines.

PLAN. Urban planning is “the application of foresight to action,” according to former American Planning Association President Stuart Meck. Planners work with residents and stakeholders as facilitators and guides to identify a desired future. Planners apply analytical skills to assess current social, economic, and environmental conditions and identify needed changes to help a community move toward this future. They create tools—policies, programs, or projects—that allow the community to realize its plans. Planners must be excellent communicators, problem solvers, and spatial thinkers.

DESIGN. Landscape architecture is the profession which applies artistic and scientific principles to the research, planning, design and management of both natural and built environments (ASLA). Landscape architects assess the characteristics of the built and natural environment to design physical solutions that address both existing problems and future needs. As designers, landscape architects seek solutions that are both functional AND beautiful. They must understand both the natural and social ecology of the place. Landscape architecture blends both engineering and creativity to design places that enhance beauty and function and mitigate vulnerabilities and challenges.

DEVELOP. Land developers create building sites and/or the leased or owned space for those sites. They negotiate between cities, business owners, investors, and financiers to meet the demand for new structures and activities within a community. Developers must assess location, suitability, and market for particular parcels within a community to

determine the appropriate use and cost for new residential, retail, commercial, or industrial development.

Undergraduate degrees include the Bachelor of Landscape Architecture and the BS in Urban and Regional Planning. Professional degrees include the Master of Landscape Architecture, the Master of Urban Planning, and the Master in Land and Property Development. We also offer a doctorate in Urban and Regional Science. Dual degrees and articulated degrees (Bachelor + Masters) are available.

Faculty

Anderson, Sammy K, Executive Associate Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 1993

Bardenhagen, Eric K, Associate Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 2011
MLA, Texas A&M University, 1999

Berke, Philip R, Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 1981

Booth, Geoffrey J, Associate Professor
Land Arch & Urban Planning
MA, University of Queensland, 1987

Brown, Robert D, Professor
Land Arch & Urban Planning
PHD, University of Guelph, 1985
MLA, University of Guelph, 1982

Cooper Jr, John T, Associate Professor of the Practice
Land Arch & Urban Planning
PHD, University of North Carolina - Chapel Hill, 2004

Dvorak, Bruce D, Associate Professor
Land Arch & Urban Planning
MLA, University of Illinois at Urbana-Champaign, 1994

Giusti, Cecilia Hundskopf, Associate Professor
Land Arch & Urban Planning
PHD, The University of Texas - Austin, 2001

Goddard, Tara B, Assistant Professor
Land Arch & Urban Planning
PHD, Portland State University, 2017

Huang, Chang S, Associate Professor
Land Arch & Urban Planning
PHD, University of Pennsylvania, 1995

Hurst, Kenneth R, Lecturer
Land Arch & Urban Planning
PHD, Texas A&M University, 2016
MLA, University of Oklahoma, 1988

Jourdan, Dawn E, Professor
Land Arch & Urban Planning
PHD, Florida State University, 2004
JD, University of Kansas, 2000

Kim, Bo Ah, Assistant Lecturer
Land Arch & Urban Planning
PHD, Texas A&M University, 2016

Kim, Yang M, Lecturer
Land Arch & Urban Planning
MLA, Texas A&M University, 2010

Lee, Chanam, Professor
Land Arch & Urban Planning
PHD, University of Washington, 2004

Lee, Ryun Jung, Lecturer
Land Arch & Urban Planning
PHD, Texas A&M University, 2018

Li, Dongying, Assistant Professor
Land Arch & Urban Planning
PHD, University of Illinois - Champaign, 2016

Li, Wei, Associate Professor
Land Arch & Urban Planning
PHD, University of California, Irvine, 2011

Lorente, Paula, Assistant Lecturer
Land Arch & Urban Planning
PHD, Texas A&M University, 2016

Martin, June C, Instructional Associate Professor
Land Arch & Urban Planning
MS, University of Georgia, 2002
MPA, University of Georgia, 1991

Merrill, Jeremy, Assistant Professor
Land Arch & Urban Planning
PHD, Kansas State University, 2014

Meyer, Michelle Annette, Assistant Professor
Land Arch & Urban Planning
PHD, Colorado State University, 2013

Mickelson, Kimberley, Visiting Associate Professor
Land Arch & Urban Planning
JD, The University of Texas School of Law, 1986

Ndubisi, Forster O, Professor
Land Arch & Urban Planning
PHD, University of Waterloo, 1987

Newman, Galen D, Associate Professor
Land Arch & Urban Planning
PHD, Clemson University, 2010
MLA, Auburn University, 2006

Noh, Youngre, Instructional Assistant Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 2015

Peacock, Walter Gillis, Professor
Land Arch & Urban Planning
PHD, University of Georgia, 1986

Reid, Russell W, Assistant Professor of the Practice
Land Arch & Urban Planning
MAR, Texas A&M University, 2001

Ren, Dingding, Lecturer
Land Arch & Urban Planning
MLA, Texas A&M University, 2018

Rising, Hope Hui, Assistant Professor
Land Arch & Urban Planning
PHD, University of Oregon, 2015
MLA, University of Michigan, 2000

Roberts, Andrea R, Assistant Professor
Land Arch & Urban Planning
PHD, University of Texas - Austin, 2016

Rodiek, Jon, Professor
Land Arch & Urban Planning
PHD, University of Massachusetts, Amherst, 1974
MLA, University of Massachusetts, 1968

Rogers, George O, Professor
Land Arch & Urban Planning
PHD, University of Pittsburgh, 1983

Teal, Michael, Assistant Professor of the Practice
Land Arch & Urban Planning
MLA, Texas A&M University, 1996

Van Zandt, Shannon S, Professor
Land Arch & Urban Planning
PHD, University of North Carolina at Chapel Hill, 2004

Varni, James Walter, Research Professor
Land Arch & Urban Planning
PHD, University of California, Los Angeles, 1976

Winslow, Jane Futrell, Assistant Professor
Land Arch & Urban Planning
PHD, The University of Texas, 2015
MLA, Kansas State University, 2010

Winslow, William Palmer, Professor Of The Practice
Land Arch & Urban Planning
MLA, University of Michigan, 1982

Woodruff, Sierra C, Assistant Professor
Land Arch & Urban Planning
PHD, University of North Carolina at Chapel Hill, 2017

Wunneburger, Douglas F, Instructional Associate Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 1992

Masters

- Master of Land and Property Development in Land and Property Development (p. 453)
- Master of Landscape Architecture in Landscape Architecture (p. 457)
- Master of Urban Planning in Urban and Regional Planning (p. 459)

Doctoral

- Doctor of Philosophy in Urban and Regional Science (p. 463)

Certificates

- Sustainable Urbanism Certificate (p. 468)

Master of Land and Property Development in Land and Property Development

The graduate program in **Land and Property Development (MLPD)** is designed for persons interested in entrepreneurial or management roles in the design, construction, development and real estate professions. The Master of Land and Property Development (MLPD) program focuses on both physical and financial aspects of land and real estate development and the creation of real estate asset value through the conceptualization, design, delivery and management of real estate assets.

Each individual's Master of Land and Property Development degree plan is structured to relate project design and venture structure to site ecology and market economy, and to stress both entrepreneurial interests of private enterprise and regulatory guidelines of public entities. Each student's degree plan includes both business and non-business courses, drawing upon resources of 17 different departments at Texas A&M, ranging from accounting, finance and marketing to landscape architecture and construction management. For more information, visit us on the website at <http://laup.arch.tamu.edu>.

This program offers several dual degree programs:

- Master of Land and Property Development/Bachelor of Science in Urban and Regional Planning
- Master of Land and Property Development/Master of Architecture
- Master of Land and Property Development/Master of Urban Planning
- Master of Land and Property Development/Master Science in Construction Management
- Master of Land and Property Development/Master of Real Estate

A student must be admitted into both degrees that form part of the dual degrees specified above before they can commence a dual degree program.

A student holding a baccalaureate degree may become a candidate for the degree of Master of Land and Property Development (MLPD). This graduate program provides opportunities for individual and collaborative work.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 453)

Degree Plan (p. 453)

Credit Requirement (p. 454)

Transfer of Credit (p. 454)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 454)

Thesis Option (p. 455)

- Thesis Proposal (p. 455)

- Final Examination/Thesis Defense (p. 455)

Non-Thesis Option (p. 456)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or his delegate concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee.

Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree plan, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 685, 689, 691, or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90**

days prior to the date of the final oral examination. This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

A student submitting proposed degree plans for Master of Land and Property Development degrees should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option." Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 credit hours for the thesis track of 36 credit hours for the non-thesis track of coursework and satisfactory final examination is required for the Master of Land and Property Development Degree. An acceptable thesis is required for the Master of Land and Property Development degree for a student who selects the thesis option program.

Transfer of Credit

A student who has earned 12 hours of graduate credit in resident study at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University or at the institution at which the courses were taken, and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses Thesis Option

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree thesis option under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University or at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 691 and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours in the combination of 691 (Research) and 684 (Professional Internship) and/or
 - Up to 8 hours of 685 (Directed Studies), or
 - Up to 3 hours of 693 (Professional Study).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree non-thesis option under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University or at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Any combination of 684, 685, and 693 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 3 hours of 684 (Professional Internship) and/or
 - Up to 8 hours of 685 (Directed Studies), or
 - Up to 3 hours of 693 (Professional Study).
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. No credit hours of 691 (Research) may be used.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Thesis Option

An acceptable thesis is required for the Master of Land and Property Development degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website <http://ogaps.tamu.edu>.

Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate that semester.

Thesis Proposal

For the thesis option Master of Land and Property Development degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the scheduling of the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, For U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, have an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given **only one** opportunity to repeat the final examination for the master's degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

A thesis is not required. A final comprehensive examination is required for the non-thesis Master of Land and Property Development program and no exemptions are allowed. The requirements as to level of courses and examinations are the same as for the thesis option Master of Land and Property Development. The final exam cannot be held prior to the midpoint of the semester if questions on the exam are based on courses in which the student is currently enrolled.

Additional Requirements

Additional Requirements

- Residence (p. 456)
- Continuous Registration (p. 456)
- Time Limit (p. 456)
- Foreign Languages (p. 456)
- Internship or Practicum (p. 456)
- Application for Degree (p. 456)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the thesis option Master of Land and Property Development. There is no residence requirement for the non-thesis Master of Land and Property Development; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Land and Property Development program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. Non-thesis option students are not required to be registered once they have completed all of the degree plan coursework. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements. A student who has chosen the thesis option must have the final corrected copies of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

A foreign language is not required for the Master of Land and Property Development degree.

Internship or Practicum

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. **The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.**

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Landscape Architecture in Landscape Architecture

The College of Architecture offers a non-thesis program leading to the degree of **Master of Landscape Architecture (MLA)**. The degree requires the completion of a minimum of 45 hours of coursework and a satisfactory comprehensive final examination.

The program in Landscape Architecture offers graduate studies leading to the Master of Landscape Architecture. The program is designed to develop professional specialized skills in the field and to provide a unique educational experience. Issues dealing with design process, natural resource management, behavioral response, construction, computer visualization and landscape planning are emphasized as separate specializations in response to the profession's leadership potentials. Programs are planned to encourage applications from a variety of backgrounds. Emphasis is placed on the development of communication, collaboration and problem solving skills associated with land design issues.

Students are required by the department to take an internship during the summer.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 457)

Degree Plan (p. 457)

Credit Requirement (p. 457)

Transfer of Credit (p. 457)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 458)

Final Examination (p. 458)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Committee Faculty, from the student's academic program and located near the Texas

A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, professional paper and is registered for courses such as 684, 685 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 45 semester credit hours of approved courses is required for the Master of Landscape Architecture degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would

be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - Up to 4 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and • Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. The candidate is not eligible to petition for an exemption from the final examination.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided exists is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 459)
- Time Limit (p. 459)
- Foreign Languages (p. 459)
- Internship or Practicum (p. 459)
- Application for Degree (p. 459)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Landscape Architecture degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Landscape Architecture degree.

Internship or Practicum

An internship is required as part of the Master of Landscape Architecture degree requirement in order for the student to graduate. The internship requirement may be met as a "full summer work internship" or a "Fall or Spring internship." Students who complete an internship during the fall or spring semester should register for Land 684 credit. Internships completed during the summer are reported as "summer work" and students should report it to the Coordinator of the MLA program. **The final examination is not to be administered until all requirements for the degree, including any internship, have been substantially completed.**

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Urban Planning in Urban and Regional Planning

<http://laup.arch.tamu.edu>

Urban planning takes a long term, comprehensive and transdisciplinary view towards enhancing the quality of the places we live in. The planning program is directed towards future professionals and scholars who seek to understand and manage urban and natural environments.

The graduate program in urban planning supports the Master of Urban Planning (MUP), as well as students pursuing degrees in fields related to cities and communities, the environment and natural resources, and public service and leadership. Because of the transdisciplinary nature of the MUP program, candidates for this degree are encouraged to apply from a broad range of disciplines such as anthropology, architecture, civil engineering, education, geography, land development, landscape architecture, political science, public service, public health, social work and sociology.

A student holding the baccalaureate degree may become a candidate for the degree of Master of Urban Planning (MUP). This two-year interdisciplinary program provides opportunities for individual and collaborative work. The minimum requirements for this degree are the completion of 48 hours of coursework and a satisfactory final examination. An acceptable thesis is required for the Master of Urban Planning degree for a student who selects the thesis option program.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 459)

Degree Plan (p. 460)

Credit Requirement (p. 460)

Transfer of Credit (p. 460)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 460)

Thesis Option (p. 461)

- Thesis Proposal (p. 461)

- Final Examination (p. 461)

Non-Thesis Option (p. 462)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's

research and thesis, has the responsibility for calling required meetings of the committee, and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

A student submitting proposed degree plans for Master of Urban Planning degrees should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 48 semester credit hours of approved courses is required for the Master of Urban Planning Degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or **in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Thesis Option

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree thesis option under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University or at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690, 691 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours in the combination of 691 (Research) and 684 (Professional Internship) and/or
 - Up to 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), or
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. No credit may be obtained by correspondence study.
8. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree non-thesis option under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University or at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 2 hours of 684 (Professional Internship) and/or
 - Up to 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), or
 - Up to 3 hours of 695 (Frontiers in Research).
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.

7. No credit hours of 691 (Research) may be used.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Thesis Option

An acceptable thesis is required for the Master of Urban Planning degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate that semester.

Thesis Proposal

For the thesis option Master of Urban Planning degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the scheduling of the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Thesis Defense/Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, For U can occur for any**

course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, have an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given **only one** opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

A thesis is not required. A final comprehensive examination is required for the non-thesis Master of Urban Planning program and no exemptions are allowed. The requirements as to level of courses and examinations are the same as for the thesis option Master of Urban Planning degree.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

Additional Requirements

Additional Requirements

- Residence (p. 462)
- Continuous Registration (p. 462)
- Time Limit (p. 462)
- Foreign Languages (p. 462)
- Internship or Practicum (p. 463)
- Application for Degree (p. 463)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the thesis option Master of Urban Planning. There is no residence requirement for the non-thesis Master of Urban Planning; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Urban Planning program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. Non-thesis option students are not required to be registered once they have completed all of the degree plan coursework. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected copies of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

A foreign language is not required for the Master of Urban Planning degree.

Internship or Practicum

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree **must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.**

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Urban and Regional Science

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 464)
- Degree Plan (p. 464)
- Transfer of Credit (p. 465)
- Research Proposal (p. 465)
- Examinations (p. 465)
 - Preliminary Examination (p. 465)
 - Preliminary Examination Format (p. 465)
 - Preliminary Examination Scheduling (p. 466)
 - Report of Preliminary Examination (p. 466)
 - Retake of Failed Preliminary Examination (p. 466)
 - Final Examination (p. 466)
 - Report of Final Examination (p. 467)
- Dissertation (p. 467)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 467)
- Time Limit (p. 468)
- Continuous Registration (p. 468)
- Admission to Candidacy (p. 468)
- Languages (p. 468)
- 99-Hour Cap on Doctoral Degree (p. 468)
- Application for Degree (p. 468)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Sustainable Urbanism - Certificate

Sustainable Urbanism is an interdisciplinary program based in the Center for Housing and Urban Development (CHUD) in the College of Architecture. The certificate explores sustainability and urban design in a rapidly urbanizing world by focusing on the processes that shape the form and function of the built environment in its full complexity—infrastructure, land development, built landscapes, and facilities—that collectively make up metropolitan regions. Recipients of the certificate are ready to investigate and apply collaborative practices to design and plan sustainable urban settlements that are livable, equitable, energy efficient, ecologically sound, and prosperous.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------------|----------------------------------------------------------|-----------------------|
| History and Theory | | 3 |
| Select one of the following: | | |
| ARCH 646 | Historic Preservation Theory and Practice | |
| LAND 630 | Development of Landscape Architecture | |
| LAND 635/ PLAN 635 | Concepts in Ecological Planning and Design | |
| PLAN 610 | Structure and Function of Urban Settlements | |
| PLAN 664 | Planning Theory and History | |
| Methods and Skills | | 3 |
| Select one of the following: | | |
| AGEC 603 | Land Economics | |
| LAND 612 | Landscape Architectural Site Engineering and Development | |
| LAND 614 | Landscape Architectural Construction | |
| LDEV 661 | Development and the Environment | |
| LDEV 671 | Sustainable Development | |
| PLAN 613 | Planning Methods and Techniques | |
| RENK 659 | Ecological Economics | |
| Electives ¹ | | 3 |
| Select one of the following: | | |
| ARCH 675 | Health Design and Research | |
| COSC 663 | Sustainable Construction | |
| CVEN 664 | Water Resources Engineering Planning and Management | |
| CVEN 672 | Engineering and Urban Transportation Systems | |
| ESSM 600 | Principles of Ecosystem Science and Management | |
| PLAN 612 | Transportation in City Planning | |
| PLAN 629 | Neighborhood Revitalization | |
| PLAN 641 | Problems of Environmental Planning Administration | |
| PLAN 642 | Planning for Coastal Sustainability and Resiliency | |
| PLAN 673 | Design for Sustainable Transportation | |
| RPTS 604 | Principles of Community and Community Development | |
| RPTS 605 | Community Organization | |
| RPTS 666 | Parks, Tourism and the Natural Environment | |
| Design and Planning Studios ² | | 6 |
| Select one of the following: | | |
| ARCH 606 | Architectural Design II | |
| ARCH 607 | Architectural Design III | |
| LAND 620 | Open Space and Land Use Planning I | |

| | | |
|-----------------------------|---------------------------------------|----|
| LAND 621 | Open Space and Land Use Planning II | |
| LDEV 687 | Development Feasibility and Design | |
| LDEV 688 | Development Feasibility and Design II | |
| PLAN 662 | Applied Planning I | |
| Total Semester Credit Hours | | 15 |

¹ Any course listed in History and Theory or Methods and Skills categories can also be used as an elective once the hour limit for that category has been met

² Urban Design Studios taught in study abroad programs also qualify

Department of Visualization

<http://viz.arch.tamu.edu>

Head: T. D. McLaughlin

Graduate Advisor: A. McNamara

For more information about the Department of Visualization visit <http://viz.arch.tamu.edu>.

Faculty

Akleman, Ergun, Professor
Visualization
PHD, Georgia Institute of Technology, 1992

Andreassen, Mayet Maria, Lecturer
Visualization
MFA, School of Animation and Visual Effects, 2006

Bieber, Susanne C, Assistant Professor
Visualization
PHD, Freie Universitat Berlin, 2012

Campana, Lilia, Instructional Assistant Professor
Visualization
PHD, Texas A&M University, 2014

Chu Yew Yee, Sharon Lynn, Assistant Professor
Visualization
PHD, Texas A&M University, 2015

Davison, Richard R, Professor
Visualization
MFA, Washington university St. Louis, 1979

Eilers, Howard F, Associate Professor
Visualization
MFA, Ohio University, 1964

Finch, Krista S, Instructional Assistant Professor
Visualization
MFA, Maryland Institute College of Art, 2000

Finch, Sherman S, Assistant Professor
Visualization
MFA, Maryland Institute College of Art, 1998

Galanter, Philip, Associate Professor
Visualization
MFA, School of Visual Arts, 1999

Hajash, Donna J, Instructional Associate Professor
Visualization
PHD, Siena Heights College, 1981

House, Felice L, Assistant Professor
Visualization
MFA, University of Texas at Austin, 2011

Jenks, Morgan M, Lecturer
Visualization
MFA, Texas A&M University, 2014

Kicklighter, Caleb L, Lecturer
Visualization
MFA, Texas A&M University, 2018

Labadessa, Steven Frank, Lecturer
Visualization
MFA, Clarion University of Pennsylvania, 2001

Lafayette, Carol J, Professor
Visualization
MFA, SUNY, University at Buffalo, 1991

Larsen, Terry R, Senior Associate Professor
Visualization
MAR, Cornell University, 1975

Leiderman, Daniil M, Instructional Assistant Professor
Visualization
PHD, PRINCETON UNIVERSITY, 2016

Lisonbee, Laurie J, Lecturer
Visualization
MFA, California State University, Fullerton, 1998

Madrid, Nathan C, Lecturer
Visualization
MFA, Texas Woman's University, 2014

McLaughlin, Timothy D, Associate Professor
Visualization
MS, Texas A&M University, 1994

McNamara, Ann M, Associate Professor
Visualization
PHD, University of Bristol, UK, 2000

Parke, Frederic I, Professor
Visualization
PHD, University of Utah, 1974

Quek, Francis K, Professor
Visualization
PHD, University of Michigan, 1990

Ragan, Eric D, Assistant Professor
Visualization
PHD, Virginia Tech, 2013

Ramadan, Hadeel M, Lecturer
Visualization
MFA, Virginia Tech, 2014

Schuld, Dawna L, Assistant Professor
Visualization
PHD, The University of Chicago, 2009

Seo, Jinsil, Associate Professor
Visualization
PHD, Simon Fraser University, 2011
MFA, School of Visual Arts, 2004

Smith, Brian M, Lecturer
Visualization
MFA, Texas A&M University, 2015

Stoenescu, Livia, Instructional Associate Professor
Visualization
PHD, Queen's University, 2010

Tassinary, Louis G, Professor
Visualization
JD, Boston College, 2003
PHD, Dartmouth College, 1984

Tessendorf, Jerry, Visiting Professor
Visualization
PHD, Brown University, 1984

Thomas, Andre, Assistant Professor of the Practice
Visualization
MFA, Laguna College of Art & Design, 2017

Woodfin, Samuel, Lecturer
Visualization
MFA, Laguna College of Art and Design, 2018

Zawadzki, Mary F, Instructional Assistant Professor
Visualization
PHD, The City University of New York, 2015

Masters

- Master of Fine Arts in Visualization (p. 470)
- Master of Science in Visualization (p. 473)

Master of Fine Arts in Visualization

The **Master of Fine Arts (MFA)** in Visualization is designed for a student seeking a computing technology-infused terminal degree in the visual arts applicable to employment in digital media fields, working as a contemporary artist, and teaching in post-secondary digital arts programs. The MFA in Visualization is a non-thesis degree requiring the completion of 60 hours of coursework and a satisfactory presentation of a body of work by the candidate. A written document addressing issues pertinent to the final study is also required.

For detailed information about the Departmental Requirements for the MFA "Body of Work" please see this link: <https://viz.arch.tamu.edu/graduate/mfa-viz%20curriculum/index.html>.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 471)

Degree Plan (p. 471)

Credit Requirement (p. 471)

Transfer of Credit (p. 471)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 472)

Final Presentation and Written Document (p. 472)

Student's Advisory Committee

After receiving admission to graduate studies and before completion of the first semester of the second year of coursework, the student will consult with the graduate program coordinator or head of the department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the final presentation and written document. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicates their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic

actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college or degree program, and no later than 90 days prior to the date of the final presentation of the student's body of work.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 60 semester credit hours of approved courses is required for the Master of Fine Arts in Visualization degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit. This is permissible if at the time the courses were completed, the student was in degree-seeking status at Texas A&M University or at the institution at which the courses were taken. Further, if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution, that coursework may be considered for transfer credit. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 15 hours or one-fourth (1/4) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 601, 684, 685, and 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 3 hours of 601 (Research Foundations) and/or
 - Up to 8 hours of 684 (Professional Internship) and/or
 - Up to 9 hours of 685 (Directed Studies) and
 - Up to 4 hours of 690 (Professional Practice).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 6 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Presentation and Written Document

The candidate must conduct a final presentation and submit a written document reflecting the presentation's content. This is done by dates announced each semester or summer term for final exam deadlines in the Office of Graduate and Professional Studies Calendar. To be eligible to conduct the final presentation, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

The candidate is not eligible to petition for an exemption from the final presentation. A request for permission to hold and announce the final presentation must be submitted to the Office of Graduate and Professional Studies a minimum of **10 working days** in advance of the scheduled date for the presentation. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final presentation for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

The final presentation shall consist of a focused body of work resulting in an appropriate form of public dissemination that reflects the student's studies within his or her research studio. Such forms might include an exhibition, screening, or installation. A body of work customized for internet delivery must also be presented in one of these forms. A written document addressing issues pertinent to the final study is also required. The written document must be prepared appropriately for publication submission to a peer-reviewed venue agreed upon with the chair. At an agreed upon time and date the student will make a formal presentation of the body of work to members of the graduate committee. Committee members will then meet privately to review the presentation (if relevant, all visitors must excuse themselves from the proceedings). A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her presentation and written document. If deemed successful by the advisory committee, the student will have completed the academic requirements for graduation.

Presentation and written document evaluation form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

- Residence (p. 473)
- Time Limit (p. 473)
- Foreign Languages (p. 473)

- Internship or Practicum (p. 473)
- Application for Degree (p. 473)

Residence

A student must complete 18 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Fine Arts in Visualization degree. A minimum of 15 credit hours of 693 must be completed as resident hours. Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework that is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Fine Arts in Visualization degree.

Internship or Practicum

An internship is not required as part of the Master of Fine Arts in Visualization degree requirement in order for the student to graduate. A student can receive credit for up to 8 hours of internship.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Visualization

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Visualization will pursue a thesis option.

For detailed information about the Departmental Requirements for the MS Degree please see this link: <https://viz.arch.tamu.edu/graduate/ms-viz%20curriculum/index.html>.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 474)
- Degree Plan (p. 474)
- Credit Requirements (p. 474)
- Transfer of Credit (p. 475)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 475)
- Thesis Option (p. 475)
 - Thesis Proposal (p. 475)
 - Final Examination (p. 476)
- Non-Thesis Option (p. 476)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science in Visualization degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 477)
- Continuous Registration (p. 477)
- Time Limit (p. 477)
- Foreign Languages (p. 477)
- Application for Degree (p. 477)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Mays Business School

Administrative Officers

Dean - Eli Jones, Ph.D.

Associate Dean for Graduate Programs - Arvind Mahajan, Ph.D.

Assistant Dean for Graduate Programs - Shannon Deer, Ph.D.

Departments

Departments

Accounting (p. 493)
 Finance (p. 497)
 Information and Operations Management (p. 504)
 Management (p. 508)
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Interdepartmental Programs

- Business Data Analytics Certificate (p. 491)
- Business Management Certificate (p. 491)
- Finance Certificate (p. 491)
- International Business Certificate (Mays MBA Students Only) (p. 491)
- International Business Certificate (Mays MS Students Only) (p. 492)
- Doctor of Philosophy in Business Administration (p. 483)
- Marketing Certificate
- Master of Business Administration in Business Administration (p. 482)
- Master of Science in Analytics (p. 478)
- Master of Science in Business (p. 480)
- Mays Executive MBA Program (p. 489)
- Mays Professional MBA Program (p. 490)
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Interdepartmental Degree Programs

Masters

- Master of Business Administration in Business Administration (p. 482)
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Doctoral

- Doctor of Philosophy in Business Administration (p. 483)

Certificates

- Business Data Analytics Certificate (p. 491)
- Business Management Certificate (p. 491)

- Finance Certificate (p. 491)
- International Business Certificate (Mays MBA Students Only)
- International Business Certificate (Mays MS Students Only)
- Marketing Certificate
- Supply Chain and Operations Certificate

Master of Science in Analytics

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Analytics will pursue a non-thesis option.

Steps to Fulfill Master's Degree Requirements

The MS in Analytics curriculum includes courses from the Mays Business School along with the courses from the Department of Statistics. The program is geared toward professionals with strong quantitative skills; that is, bachelor's degree holders in the sciences, mathematics, business and engineering fields. The program revolves around a work-based capstone project where students apply what they have learned in their classes to solve a business problem within their organization. The student develops a hybrid of the most sought after skills in every industry: statistics, technological expertise and business analysis.

The MS in Analytics curriculum includes courses from the Mays Business School along with the courses from the Department of Statistics. The program is geared toward professionals with strong quantitative skills; that is, bachelor's degree holders in the sciences, mathematics, business and engineering fields. The program revolves around a work-based capstone project where students apply what they have learned in their classes to solve a business problem within their organization. The student develops a hybrid of the most sought after skills in every industry: statistics, technological expertise and business analysis.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 479)
- Degree Plan (p. 479)
- Credit Requirements (p. 479)
- Transfer of Credit (p. 479)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 479)
- Thesis Option (p. 480)
- Non-Thesis Option (p. 480)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional

paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved coursework is required for the non-thesis option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

Due to our cohort model, the MS in Analytics program does not accept transfer of credit or substitutions.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

Courses previously used for another degree are not acceptable for degree plan credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

Please note that the thesis option does not apply to the MS in Analytics program.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 480)
- Continuous Registration (p. 480)
- Time Limit (p. 480)
- Foreign Languages (p. 480)
- Application for Degree (p. 480)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such

a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Business

The Mays Business School offers a graduate program leading to the degree of **Master of Science in Business (MSB)**. Enrollment in the 11-month program and related courses is restricted to students possessing a non-business undergraduate degree and less than 12 months of post-graduation work experience.

The Mays Business School offers this 36 credit hour program as a single-cohort, action-based, purposely designed curriculum intended to help students develop core business acumen, cultivate leadership skills, and dynamically enhance professional marketability in an increasingly competitive job market. All core course enrollments are handled through the Mays MS Business Program Office.

Details regarding the Mays MS Business Program curriculum may be obtained by visiting the MS Business Program Office (Wehner 365) or at <http://mays.tamu.edu/ms-business>. The Mays MS Business Program is a non-thesis degree for which a final oral examination is not required.

Admission to the program is for the Summer session only. The program commences once annually in early summer. The Mays Business School is accredited by the Association to Advance Collegiate Schools of Business (AACSB) at all program levels.

Program Requirements

Student's Advisory Committee (p. 481)

Degree Plan (p. 481)

Course Requirement (p. 481)

Transfer of Credit (p. 481)

Limitations on the Use of Transfer, Extension, and Certain Other Courses (p. 481)

Final Examination (p. 481)

Student's Advisory Committee

The Mays MS Business student's advisory committee consists of the Director of the Mays MS Business Program, or the Associate Dean for Graduate Programs within the Mays Business School. The Director or the Associate Dean has the responsibility of approving the standardized degree plan for each MS Business student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be completed and processed by the MS Business program office and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than dates announced in the OGAPS calendar of deadlines for graduation.

Course Requirement

The course requirements for the Mays MS Business degree consists of 36 credit hours, 20 hours of which are core business courses and 16 hours of which are Business Administration (BUAD) courses.

Transfer of Credit

Because of the nature and structure of the Mays MS Business program, the transfer of credit for the MS Business core courses is not accepted.

Limitations on the Use of Transfer, Extension, and Certain Other Courses

Normally the use of such courses is not permitted within the Mays MS Business coursework.

For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

Final Examination

A final oral examination is not required for the Master of Science in Business degree.

Additional Requirements

Residence (p. 481)

Time Limit (p. 481)

Scholastic Requirements (p. 481)

Foreign Languages (p. 481)

Application for Degree (p. 481)

Residence

A student must complete 36 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Science in Business degree. See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Scholastic Requirements

To maintain good academic standing and to be eligible for graduation, a Mays MS Business student must maintain a minimum cumulative 3.000 GPR in each block of the Mays MS Business Program. A degree-seeking graduate student is considered to be scholastically deficient if either his or her cumulative GPR or the GPR for courses listed on the degree plan falls below 3.000.

In the event a degree-seeking graduate student becomes scholastically deficient, he or she may be subject to one of the following actions, initiated by a recommendation from the Director of the Mays MS Business Program or the Associate Dean for Graduate Programs within the Mays Business School:

1. Permitted to continue in the program on scholastic probation. A student failing to attain a 3.000 GPR by the end of the next block may be dismissed from the program.
2. Immediate dismissal from the program due to the severity of the scholastic deficiency.

The Director of the Mays MS Business Program or Associate Dean for Graduate Programs will evaluate all scholastic probation students at the end of each of the program's blocks and take appropriate action. When necessary, recommendations regarding the blocking of the student from further enrollment will be made to the Office of Graduate and Professional Studies.

A student who withdraws or is dismissed from the Mays MS Business Program may not reenter the program. An exception may be granted in the case of voluntary withdrawal in good academic standing with prior approval at the time of withdrawal from the Director of the Mays MS Business Program or the Associate Dean of Graduate Programs. A student who withdraws, or who is dismissed from the program, after the University deadline for refunds will not receive any refund of tuition and fees.

Foreign Languages

No specific language requirement exists for the Master of Science in Business degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of Business Administration in Business Administration

The Mays Business School offers a graduate program leading to the degree of **Master of Business Administration (MBA)**. Enrollment in the Mays MBA Program and related courses is restricted to students in the classification G7 BUAD. A G6 student is not eligible to enroll in Mays MBA Program courses.

The Mays MBA Program offers an accelerated MBA for a minimum of 49 credit hours with some options for customization. A student has the option of choosing a certificate program or specialization coursework in addition to the core degree requirements making the total credit hours of the program up to 61. All core course enrollments are handled through the Mays MBA Program Office. Details regarding the Mays MBA Program curriculum may be obtained by contacting the MBA Program Office or at <http://mays.tamu.edu/full-time-mba/>. The Mays MBA Program is a non-thesis degree for which a final oral examination is not required. Admission to the program is in the fall semester only. The Mays Business School is accredited by the Association to Advance Collegiate Schools of Business (AACSB) at all program levels.

English Language Proficiency Requirements

The Mays MBA Program requires a minimum TOEFL score of 250 (computer-based) 600, (paper-based), or 100 (TOEFL-iBT) for admission. Alternatively, the IELTS with a minimum score of 7.0 or Pearson Test of English (PTE) with a minimum score of 68 may be submitted for admission consideration.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 482)

Degree Plan (p. 482)

Course Requirement (p. 482)

Transfer of Credit (p. 482)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 482)

Final Examination (p. 482)

Student's Advisory Committee

The Mays MBA student's advisory committee consists of the Director of the Mays MBA Program, or the Associate Dean for Graduate Programs within the Mays Business School. The Director or the Associate Dean has the responsibility of approving the proposed degree plan for an MBA student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be completed and processed by the MBA office and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than dates announced in the OGAPS calendar of deadlines for graduation. It is recommended that a student who is planning to take additional courses after the completion of the Mays MBA core courses meet with

the academic advisor in the Mays MBA Program Office. Additional coursework may be added to the approved degree plan by petition.

Course Requirement

The Mays MBA Program offers an accelerated MBA for a minimum of 49 credit hours with some options for customizations. A student has the option of choosing a certificate program or specialization coursework in addition to the core degree requirements making the total credit hours of the program up to 61. The details of the certificates and specializations are found on the Mays MBA website (<http://mays.tamu.edu/full-time-mba>).

Transfer of Credit

Because of the nature and structure of the Mays MBA program, the transfer of credit for the MBA core courses is not accepted.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Normally the use of such courses is not permitted within the Mays MBA core courses.

For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

Final Examination

A final oral examination is not required for the Master of Business Administration degree.

Additional Requirements

Additional Requirements

- Residence (p. 482)
- Time Limit (p. 482)
- Scholastic Requirements (p. 482)
- Foreign Languages (p. 483)
- Application for Degree (p. 483)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Business Administration degree.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Scholastic Requirements

To maintain good academic standing and to be eligible for graduation, a Mays MBA student must maintain a minimum cumulative 3.000 GPR in each term of the Mays MBA Program. A degree-seeking graduate student

is considered to be scholastically deficient if either his or her cumulative GPR or the GPR for courses listed on the degree plan falls below 3.000.

In the event a degree-seeking graduate student becomes scholastically deficient, he or she may be subject to one of the following actions, initiated by a recommendation from the Director of the Mays MBA Program or the Associate Dean for Graduate Programs within the Mays Business School:

1. Permitted to continue in the program on scholastic probation. A student failing to attain a 3.000 GPR by the end of the next term may be dismissed from the program.
2. Immediate dismissal from the program due to the severity of their scholastic deficiency.

The Director of the Mays MBA Program or Associate Dean for Graduate Programs will evaluate all scholastic probation students at the end of each of the program's terms and take appropriate action. When necessary, recommendations regarding the blocking of the student from further enrollment will be made to the Office of Graduate and Professional Studies.

A student who withdraws or is dismissed from the Mays MBA Program may not reenter the program. An exception may be granted in the case of voluntary withdrawal in good academic standing with prior approval at the time of withdrawal from the Director of the Mays MBA Program or the Associate Dean of Graduate Programs. A student who withdraws, or who is dismissed from the program, after the University deadline for refunds will not receive any refund of tuition and fees.

Foreign Languages

No specific language requirement exists for the Master of Business Administration degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Business Administration

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 484)
- Degree Plan (p. 484)
- Transfer of Credit (p. 485)
- Research Proposal (p. 485)
- Examinations (p. 485)
 - Preliminary Examination (p. 485)
 - Preliminary Examination Format (p. 485)
 - Preliminary Examination Scheduling (p. 486)

- Report of Preliminary Examination (p. 486)
- Retake of Failed Preliminary Examination (p. 486)
- Final Examination (p. 487)
- Report of Final Examination (p. 487)
- Dissertation (p. 487)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 487)
- Time Limit (p. 488)
- Continuous Registration (p. 488)
- Admission to Candidacy (p. 488)
- Languages (p. 488)
- 99-Hour Cap on Doctoral Degree (p. 488)
- Application for Degree (p. 489)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Mays Executive MBA Program

The Mays Business School offers an Executive MBA Program (EMBA) leading to the degree of Master of Business Administration (MBA) for working professionals with significant professional and managerial experience. Selected EMBA participants only are eligible to enroll in the Mays Executive MBA Program courses.

The Mays Executive MBA Program is a 45 credit hour, lock-step program. All course enrollments are handled through the Mays Executive MBA Program Office. The Mays EMBA Program class sessions are held at CityCentre III in Houston, Texas. It is required that all class sessions must be attended by participants in person on the scheduled Friday and Saturday weekends, 9 a.m. – 4:30 p.m. Details regarding the Mays EMBA Program may be obtained by contacting the Mays EMBA Program Office or at the website <http://mays.tamu.edu/executive-mba/>. The Mays EMBA Program is a non-thesis degree for which a final oral examination is not required. Admission to the program is in the fall semester only. The Mays Business School is accredited by the Association to Advance Collegiate Schools of Business (AACSB) at all program levels.

GMAT and TOEFL Requirements

Students in the Mays Executive MBA Program are exempt from the GMAT and TOEFL but these scores may be used to satisfy English Proficiency requirements.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 489)

Degree Plan (p. 489)

Credit Requirements (p. 489)

Transfer of Credit (p. 489)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 489)

Final Examination (p. 489)

Student's Advisory Committee

The Mays Executive MBA participant's advisory committee consists of the Director of the Mays EMBA Program or the Associate Dean for Graduate Programs within the Mays Business School. The Director or the Associate Dean has the responsibility of approving the proposed degree plan for EMBA participants. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be completed and filed by the Mays EMBA Program office with the Office of Graduate and Professional Studies following the deadline imposed by the participant's college and no later than dates announced in the OGAPS calendar of deadlines for graduation.

Credit Requirements

The course requirements for the Mays Executive MBA Program degree consist of 45 credit hours. No options are provided for completing a certificate program or additional courses beyond the degree requirements.

Transfer of Credit

The transfer of credit for Mays EMBA courses is not accepted because of the nature and structure of the Mays Executive MBA Program curriculum.

Limitations on the Use of Transfer, Extension and Certain Other Courses

The use of such courses is not permitted within the Mays Executive MBA Program curriculum.

For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

Final Examination

A final oral examination is not required for the Executive Master of Business Administration degree.

Additional Requirements

Additional Requirements

- Scholastic Requirements (p. 489)
- Application for Degree (p. 489)

Scholastic Requirements

To maintain good academic standing and to be eligible for graduation, a Mays Executive MBA Program participant must maintain a cumulative 3.000 GPR in the Mays Executive MBA Program curriculum, and he/she must not have any unabsolved grades of D, F, or U on any course on his/her degree plan. To absolve deficient grades, the student must repeat the course at Texas A&M University attaining a final grade of C or better. A student failing to attain or maintain a cumulative 3.000 GPR by the end of the next term may be dismissed from the program. The Director of the Mays Executive MBA Program and the Associate Dean for Graduate Programs will evaluate all scholastic probation participants at the end of each of the program's terms and take appropriate action. When necessary, recommendations regarding the blocking of a student from further enrollment will be made to the Office of Graduate and Professional Studies.

An EMBA participant who withdraws or is dismissed from the Mays Executive MBA Program may not reenter the program. An exception may be granted in the case of voluntary withdrawal in good academic standing with prior written approval at the time of withdrawal from the Director of the Mays Executive MBA Program and the Associate Dean for Graduate Programs. A participant who withdraws or who is dismissed from the program after the deadline for refund will not receive any refund of tuition and fees.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Mays Professional MBA Program

The Mays Business School offers a Professional MBA Program (Professional MBA) leading to the degree of Master of Business Administration (MBA) for working professionals with professional work experience. Selected Professional MBA participants only are eligible to enroll in the Mays Professional MBA Program courses.

The Mays Professional MBA Program is a 45-credit hour, lock-step program. All course enrollments are handled through the Mays Professional MBA Program Office. The Mays Professional MBA Program class sessions are held at CityCentre III in Houston, Texas. It is required that all class sessions must be attended by participants in person on the scheduled weekends; Fridays from 6:00 p.m. to 10:00 p.m. and Saturdays from 9:00 a.m. to 6:00 p.m. Details regarding the Mays Professional MBA Program may be obtained by contacting the Mays MBA Program Office or at <http://mays.tamu.edu/professional-mba/>. The Mays Professional MBA Program is a non-thesis degree for which a final oral examination is not required. Admission to the program is in the fall semester only. The Mays Business School is accredited by the Association to Advance Collegiate Schools of Business (AACSB) at all program levels.

GMAT and TOEFL Requirements

Students in the Mays Professional MBA Program are required to take the GMAT or GRE exam. International students are required to meet a minimum TOEFL score or receive a waiver.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 490)

Degree Plan (p. 490)

Credit Requirements (p. 490)

Transfer of Credit (p. 490)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 490)

Final Examination (p. 490)

Student's Advisory Committee

The Mays Professional MBA participant's advisory committee consists of the Director of the Mays Professional MBA Program or the Associate Dean for Graduate Programs within the Mays Business School. The Director or the Associate Dean has the responsibility of approving the proposed degree plan for Professional MBA participants. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be completed and filed by the Mays Professional MBA Program office with the Office of Graduate and Professional Studies following the deadline imposed by the participant's college and no later than dates announced in the OGAPS calendar of deadlines for graduation.

No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirements

The course requirements for the Mays Professional MBA Program degree consist of 45 credit hours. No options are provided for completing a certificate program or additional courses beyond the degree requirements.

Transfer of Credit

The transfer of credit for Mays Professional MBA courses is not accepted because of the nature and structure of the Mays Professional MBA Program curriculum.

Limitations on the Use of Transfer, Extension and Certain Other Courses

The use of such courses is not permitted within the Mays Professional MBA Program curriculum.

For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

Final Examination

A final oral examination is not required for the Professional Master of Business Administration degree.

Additional Requirements

Additional Requirements

- Scholastic Requirements (p. 490)
- Application for Degree (p. 491)

Scholastic Requirements

To maintain good academic standing and to be eligible for graduation, a Mays Professional MBA Program participant must maintain a cumulative 3.000 GPR in the Mays Professional MBA Program curriculum, and he/she must not have any unabsolved grades of D, F, or U on any course on his/her degree plan. To absolve deficient grades, the student must repeat the course at Texas A&M University attaining a final grade of C or better. A student failing to attain or maintain a cumulative 3.000 GPR by the end of the next term may be dismissed from the program. The Director of the Mays Professional MBA Program and the Associate Dean for Graduate Programs will evaluate all scholastic probation participants at the end of each of the program's terms and take appropriate action. When necessary, recommendations regarding the blocking of a student from further enrollment will be made to the Office of Graduate and Professional Studies.

A Professional MBA participant who withdraws or is dismissed from the Mays Professional MBA Program may not reenter the program. An exception may be granted in the case of voluntary withdrawal in good academic standing with prior written approval at the time of withdrawal from the Director of the Mays Professional MBA Program and the Associate Dean for Graduate Programs. A participant who withdraws or who is dismissed from the program after the deadline for refund will not receive any refund of tuition and fees.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Business Data Analytics - Certificate

Mays Business School offers a Business Data Analytics Certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|---------------------------------------|---------------------------------------------------|-----------------------|
| Required courses | | |
| SCMT 610 | Business Analytics | 3 |
| Elective courses ¹ | | 9 |
| Select three of the following course: | | |
| AGEC 621 | Econometrics for Agribusiness | |
| AGEC 622 | Agribusiness Analysis and Forecasting | |
| ECMT 674 | Economic Forecasting | |
| ISTM 622 | Advanced Data Management | |
| ISTM 650 | Business Data Mining | |
| ISTM 652 | Customer Relationship Management and Technologies | |
| MKTG 625 | Marketing Analytics I | |
| SCMT 616 | Supply Chain Management | |
| SCMT 650 | Applied Predictive Analytics for Business | |
| SCMT 685 | Directed Studies | |
| SCMT 689 | Special Topics in... | |
| Total Semester Credit Hours | | 12 |

¹ List of courses, prepared by the certificate coordinator, that may be taken as prescribed elective courses.

Business Management - Certificate

Prior to registering for the certificate courses the MBA student must inform the Mays MBA program office of their intentions to take the certificate and present the proposed courses for approval by the office.

Program Requirements

Requirements include completion of at least 4 graduate level courses (12 credit hours) offered by Mays Business School. These courses may NOT include ACCT 640, FINC 635, MKTG 621 and MKTG 675 or MGMT 655 and MGMT 680 as these are duplications of the core MBA courses. All courses taken toward the certificate must be taken for a grade. Courses taken S/U will not count toward the certificate. The student must maintain a minimum GPA of 3.0 in the courses for the certificate.

Courses for completing this certificate must be taken during the Spring Semester of Year 2 of the student's program.

Finance - Certificate

Mays Business School offers a Finance Certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------|-------------------------------------------|-----------------------|
| Required courses | | |
| FINC 613 | Finance for the Professional II | 3 |
| Elective Courses ¹ | | |
| Select three of the following: | | 9 |
| FINC 632 | Investment Management | |
| FINC 641 | Valuation | |
| FINC 644 | Funding New Ventures | |
| FINC 646 | Technical Analysis of Financial Markets | |
| FINC 647/ ACCT 647 | Financial Statement Analysis | |
| FINC 648 | Advanced Investments | |
| FINC 649 | Financial Modeling | |
| FINC 665 | Derivative Securities | |
| FINC 668 | Applied Investment Analysis | |
| FINC 669 | Titans of Investing | |
| FINC 670 | Real Property Analysis | |
| FINC 673 | Real Property Valuation I | |
| FINC 676 | Commercial Real Estate Law | |
| FINC 677 | Real Estate Development Analysis | |
| FINC 685 | Directed Studies | |
| SCMT 650 | Applied Predictive Analytics for Business | |
| Total Semester Credit Hours | | 12 |

¹ List of courses, prepared by the certificate coordinator, that may be taken as prescribed elective courses.

International Business - Certificate (Mays MBA Students Only)

The increasing globalization of the contemporary business environment finds companies under pressure to change and adapt to new technologies and markets. Companies need MBA students that are sensitive to diverse cultures and understand global developments and ethics.

The Graduate Certificate in International Business provides you with the knowledge base and international exposure needed to meet the global business challenges faced by organizations today.

Program Requirements

The Certificate in International Business (Mays MBA Students Only) requires study abroad. To provide flexibility for the time abroad several options are presented.

Prerequisites

- Option 1 - completion of Terms 1, 2, 3 of Mays MBA Program, or at least two semesters in an MS Program offered in the Mays Business School, or MRE Program.

- Option 2 - completion of Terms 1, 2, 3 of Mays MBA Program.
- Option 3 - completion of Terms 1, 2, 3, 4 of Mays MBA Program.

Requirements

- 12 credit hours minimum

Options

- Option 1
 - Summer after Term 3 - Study Aboard with at least 12 credit hours as approved by the Mays MBA Program office.
 - Term 4 - regular courses on campus
- Option 2
 - Summer after Term 3 - 2 IBUS courses either on campus or aboard.
 - Term 4 - semester long exchange program abroad including Internship and Business Consulting course.
- Option 3
 - Spring semester following Term 4 - semester long exchange program abroad.

International Business - Certificate (Mays MS Students Only)

Certificate in International Business (Mays MS Students Only) is an innovative program, interdisciplinary and international in its orientation, offered by the Mays Business School. All graduate business students seeking a Master of Science degree are eligible to pursue the Certificate program.

For more information and to coordinate content of and participation in the certificate program, graduate business students should contact the departmental advisor of the MS program.

Program Requirements

Prerequisite

IBUS 678/MGMT 678

Requirements

Participate in a semester-long (summer, fall or spring) overseas study program identified by Mays Business School and during which enroll in at least 12 semester credit hours in international business courses.

Options

- Option 1 - Summer session between the first and second year of the MS Program. Participate in the five-week (normally between mid May - third week of June), six credit hour, "Strategies for Europe" program conducted by EDHEC Business School (our exchange partner institution in France). The first 3-credit hour international business course (two-week segment) focuses on European Culture and Environment and is conducted at EDHEC's Nice Campus. The second 3-credit hour course (two-week segment) focuses on Managing Operations in Europe and is conducted at EDHEC's Lille Campus. There is a 1-week break between the two segments to move from Southern to Northern France and do some travel in Europe. In addition, participate in the six-week (normally between the fourth week of June through the first week of August) "International Summer University" program conducted by Copenhagen Business School

(CBS) in Denmark (another partner institution of Mays Business School). Students will also enroll in two international business courses offered by CBS.

- Option 2 - Fall or spring (second year) semesters of MS program. Spend the entire fall or spring semester (semester dates vary with partner institution) with any one of our 15 exchange partner institutions (<http://mays.tamu.edu/center-for-international-business-studies>) in Europe, Mexico or India. At that location students will enroll in four international business courses for 12 semester credit hours.

Marketing - Certificate

Mays Business School offers a Marketing Certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------|--------------------------------------|-----------------------|
| Required course | | |
| MKTG 613 | Marketing Management | 1-3 |
| Elective courses ¹ | | |
| Select three of the following: | | 9 |
| MKTG 673 | Services Marketing | |
| MKTG 671 | Product Innovation | |
| MKTG 650 | Analyzing Consumer Behavior | |
| MKTG 656 | Branding and Marketing Communication | |
| MKTG 625 | Marketing Analytics I | |
| Total Semester Credit Hours | | 12 |

¹ List of courses, prepared by the certificate coordinator, that may be taken as prescribed elective courses.

Supply Chain and Operations - Certificate

Mays Business School offers a Supply Chain and Operations Certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------------------------------|-------------------------------------------|-----------------------|
| Required course | | |
| SCMT 614 | Operations Management | 3 |
| Elective courses ¹ | | |
| Select three from the following: | | 9 |
| MGMT 639 | Negotiations in Competitive Environments | |
| MGMT 658 | Managing Projects | |
| SCMT 335 | Sourcing and Procurement | |
| SCMT 616 | Supply Chain Management | |
| SCMT 650 | Applied Predictive Analytics for Business | |
| SCMT 685 | Directed Studies | |

SCMT 689 Special Topics in... (Sourcing and Procurement)

Total Semester Credit Hours

12

¹ List of courses, prepared by the certificate coordinator, that may be taken as prescribed elective courses.

Department of Accounting

<http://mays.tamu.edu/acct>

Head: J. Benjamin

PhD Advisor: N. Sharp

MS Advisor: M. Shaub

The Department of Accounting offers graduate studies leading to the MS and PhD degrees, and coursework supporting Mays Business School's several Master's-level degrees, such as MBA, MS-Finance, etc. The MS-Accounting degree provides the necessary coursework for students who wish to enter public accounting or corporate accounting/finance fields. The department also offers an integrated Professional Program that students enter in the junior year of the BBA program. Graduates of the Professional Program of Accounting receive a Bachelor of Business Administration degree and an MS degree in a business discipline. The PhD program is designed to prepare students for careers in teaching and research. Additional information, including specific departmental requirements, may be obtained by contacting the master's student advisor or the doctoral student advisor in the Department of Accounting.

Please be advised that Texas A&M offers many programs that lead to an occupational license as defined under Texas Occupations Code 58.001. Licensing authorities may have guidelines concerning prior criminal convictions that would make an individual ineligible for issuance of a given license. Applicants are encouraged to review all eligibility requirements related to degrees resulting in a license. Note the following:

- An individual who has been convicted of an offense may be ineligible for issuance of an occupational license.
- Licensing authorities must establish and make available guidelines explaining why a particular offense is considered a basis for ineligibility for a particular license and other criterion that may affect the decision to grant or withhold a license.
- An individual has the right to request a criminal history evaluation letter regarding their eligibility for a license issued under Texas Occupations Code 53.102.

Questions related to eligibility requirements to take the CPA examination in Texas should be directed to the Texas State Board of Public Accountancy (http://txrules.elaws.us/rule/title22_chapter525_sec.525.1) (or the licensing authority in other jurisdictions).

Faculty

Ahmed, Anwer S, Professor
Accounting
PHD, University of Rochester, 1992

Benjamin, James J, Professor
Accounting
PHD, Indiana University, 1972

Cline, Kayla M, Clinical Assistant Professor
Accounting
PHD, Texas A&M University, 2017

Cohen, Daniel, Professor
Accounting
PHD, Northwestern University, 2004

Diaz, Michelle C, Clinical Associate Professor
Accounting
PHD, Texas A&M University, 2005

Ege, Matthew S, Assistant Professor
Accounting
PHD, The University of Texas at Austin, 2013

Flagg, James C, Associate Professor
Accounting
PHD, Texas A&M University, 1988

Garza, Brent A, Assistant Professor
Accounting
PHD, University of Illinois-Urbana-Champaign, 2017

Green, Jeremiah, Associate Professor
Accounting
DBA, University of North Carolina - Chapel Hill, 2010

Grossman, Steven D, Associate Professor
Accounting
PHD, Tufts University, 1972

Hepfer, Bradford F, Assistant Professor
Accounting
DBA, The University of Iowa, 2016

Kartapanis, Antonis, Assistant Professor
Accounting
PHD, The University of Texas at Austin, 2019

Lassila, Dennis R, Professor
Accounting
PHD, University of Minnesota, 1981

Loudder, Martha L, Professor
Accounting
PHD, Arizona State University, 1990

McAnally, Mary L, Professor
Accounting
PHD, Stanford University, 2011

McGowan, Annie L, Associate Professor
Accounting
PHD, University of North Texas, 1994

McGuire, Sean T, Associate Professor
Accounting
PHD, University of Georgia, 2008

Ray, Korok, Associate Professor
Accounting
PHD, Standard Graduate School of Business, 2004

Rhodes, Adrienne C, Assistant Professor
Accounting
PHD, Pennsylvania State University, 2008

Rice, Sarah C, Associate Professor
Accounting
PHD, The Ohio State University, 2007

Robinson, John R, Professor
Accounting
PHD, University of Michigan, 1981
JD, University of Michigan, 1979

Sanders, Joan T, Senior Lecturer
Accounting
MS, Texas A&M University, 1990

Shafron, Emily, Assistant Professor
Accounting
PHD, The University of Georgia, 2019

Sharp, Nathan Y, Professor
Accounting
PHD, University of Texas, 2007

Shaub, Michael K, Clinical Professor
Accounting
PHD, Texas Tech University, 1989

Stasny, Mary A, Senior Lecturer
Accounting
PHD, Texas A&M University, 2010

Strawser, Jerry R, Professor
Accounting
PHD, Texas A&M University, 1985

Strawser, Robert H, Professor
Accounting
DOC, University of Maryland, 1969

Stuber, Sarah, Assistant Professor
Accounting
PHD, Michigan State University, 2019

Swanson, Edward P, Professor
Accounting
PHD, University of Wisconsin, 1977

Tse, Senyo Y, Professor
Accounting
PHD, University of California - Berkeley, 1983

Wang, Dechun, Professor
Accounting
PHD, University of Missouri - Columbia, 2004

Weaver, Constance D, Professor
Accounting
PHD, Arizona State University, 1997

Wolfe, Christopher J, Professor
Accounting
PHD, Kent State University, 1984

Yust, Christopher G, Assistant Professor
Accounting
PHD, The University of Texas of Austin, 2015

Masters

- Master of Science in Accounting (p. 494)

Master of Science in Accounting

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Accounting will pursue a non-thesis option.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 495)
- Degree Plan (p. 495)
- Credit Requirement (p. 495)
- Transfer of Credit (p. 495)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 495)
- Non-Thesis Option (p. 496)

Student's Advisory Committee

The MS-ACCT student's advisory committee consists of the Director of the Professional program and MS-Accounting program, who is a faculty member in the Department of Accounting at the Mays Business School.

The Director has the responsibility of approving the proposed degree plans for MS-ACCT students. In addition, the committee is responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be filed with the Office of Graduate and Professional Studies and approved by the MS-ACCT director before the deadline imposed by the MS-ACCT program and no later than dates announced in the OGAPS calendar of deadlines for graduation.

Additional coursework may be added to the approved degree plan by petition to the MS-ACCT Director.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Credit Requirement

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework in which **no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:

- Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

The Final Examination is not required for the Master of Science in Accounting.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not

exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 496)
- Continuous Registration (p. 496)
- Time Limit (p. 496)
- Foreign Languages (p. 496)
- Application for Degree (p. 497)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Finance

<https://mays.tamu.edu/departments-of-finance>

Head: S. M. Sorescu

PhD Advisor: H. Kim

MS Advisor: K. Moore

The Department of Finance offers Master of Science, Master of Real Estate (MRE), Master of Financial Management, and Doctor of Philosophy degrees.

The Master of Science in Finance (MSF) "STEM to Stocks" Program is a 36-hour, non-thesis degree that prepares non-finance undergraduate students for finance careers in corporate/government, consulting/professional services, and financial services. The program is specifically designed for STEM (science, technology, engineering, math) and economics majors. Accelerated admission is available for Texas A&M sophomores and juniors. For more information, visit STEMtoStocks.com (<https://mays.tamu.edu/ms-finance>).

The Master of Real Estate (MRE) program is a 36-hour, non-thesis graduate program that develops the advanced competencies and skills needed for a successful career in the real estate industry. The program integrates the study of real estate and business through a broad curriculum including accounting, finance, law, and a professional internship. Prospective students should visit <http://mays.tamu.edu/master-of-real-estate> for more information. To apply, go to the online application (<http://app.applyyourself.com/?id=tamu-ms>).

The Master of Financial Management (MFM) degree is currently open only to students who have been admitted to one of the following three programs: (i) the Professional Program in Accounting (PPA), (ii) the Trading, Risk & Investments Program (TRIP), and (iii) the Commercial Banking Program (CBP). Each of these three programs is responsible for setting its own admission criteria.

The doctoral program in finance brings the PhD student to the leading edge of knowledge in the field. Rigorous coursework and research activities provide the student with an in-depth understanding of the theoretical, conceptual, and managerial foundations of finance. In addition to possessing a thorough and comprehensive knowledge of the field, students who successfully complete the doctoral program can demonstrate advanced competencies for conducting quality research, directing research of others, and communicating research findings through teaching and publication. For more information, visit <http://mays.tamu.edu/phd-finance>. To apply, go to the online application (<http://app.applyyourself.com/?id=tamu-ms>).

Faculty

Bouwman, Christa, Associate Professor
Finance
PHD, University of Michigan, 2005

Chen, Yong, Associate Professor
Finance
PHD, Boston College, 2007

Donnell, Cydney C, Executive Professor
Finance
MBA, Southern Methodist University, 1982

Dye, Richard T, Clinical Professor
Finance
PHD, Texas A&M University, 1993

Erturk, Bilal, Visiting Assistant Professor
Finance
PHD, Texas A&M University, 2006

Fitzgerald, Tristan, Assistant Professor
Finance
PHD, University of California, Berkeley, 2018

Garey, William D, Executive Professor
Finance
MBA, University of Houston - Clear Lake, 1980

Gaspar, Julian, Clinical Professor
Finance
PHD, Georgetown University, 1981

Halket, Jonathan Robert Levin, Assistant Professor
Finance
PHD, New York University, 2009

Hallermann, Detlef, Clinical Professor
Finance
PHD, Colorado School of Mines, 1999

Harris IV, T, Executive Professor
Finance
BBA, Texas A&M University, 1980

Johnson, Shane A, Professor
Finance
PHD, Louisiana State University, 1991

Kim, Hwagyun, Associate Professor
Finance
PHD, University of Chicago, 2003

Kolari, James, Professor
Finance
PHD, Arizona State University, 1980

Kolasinski, Adam C, Associate Professor
Finance
PHD, MIT, 2006

Liu, Xiaoding, Assistant Professor
Finance
PHD, University of Florida, 2012

Liu, Yan, Assistant Professor
Finance
PHD, Duke University, 2014

Mahajan, Arvind, Regents Professor
Finance
PHD, Georgia State University, 1980

Martindale, Lanny R, Senior Lecturer
Finance
JD, South Texas College of Law, 1995

Medina Palma, Paolina Del Car, Assistant Professor
Finance
PHD, Northwestern University, 2017

Mohseni, Mahdi, Assistant Professor
Finance
PHD, Boston College, 2015

Moore, Kevin M, Executive Professor
Finance
MS, Johns Hopkins University, 2013

Peterson, John R, Clinical Assistant Professor
Finance
PHD, Texas A&M University, 2002

Rossi, Marco, Assistant Professor
Finance
PHD, Pennsylvania State University, 2010

Sharpe, Bradley, Lecturer
Finance
JD, Baylor University School of Law, 1997

Skeie, David R, Assistant Professor
Finance
PHD, Princeton, 2004

Sorescu, Sorin M, Professor
Finance
PHD, University of Florida, 1996

Tebeaux, William J, Executive Professor
Finance
MBA, University of Houston, 1971

White, Edward C, Executive Professor
Finance
MBA, University of Hawaii, 1972

Wolken, Lawrence C, Senior Professor
Finance
PHD, Texas A&M University, 1972

Wu, Wei, Assistant Professor
Finance
PHD, University of Chicago, 2015
PHD, Duke University, 2009

Masters

- Master of Financial Management in Financial Management (p. 501)
- Master of Real Estate in Land Economics and Real Estate (p. 502)
- Master of Science in Finance (p. 498)

Master of Science in Finance

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Finance will pursue a non-thesis option.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 499)
- Degree Plan (p. 499)
- Credit Requirements (p. 499)
- Transfer of Credit (p. 499)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 499)
- Non-Thesis Option (p. 500)

Student's Advisory Committee

The MS-FINC student's advisory committee consists of the Director of MS-FINC program, who is a faculty member in the Department of Finance at Mays Business School. The Director has the responsibility of approving the proposed degree plans for MS-FINC students. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be filed with the Office of Graduate and Professional Studies and approved by the MS-FINC director before the deadline imposed by the MS-FINC program and no later than

dates announced in the OGAPS calendar of deadlines for graduation.

Additional coursework may be added to the approved degree plan by petition to the MS-FINC director.

Credit Requirement

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 4 hours of 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.
9. No credit hours of 691 (Research) may be used.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

- Residence (p. 500)
- Continuous Registration (p. 500)
- Time Limit (p. 500)
- Foreign Languages (p. 500)
- Application for Degree (p. 500)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Financial Management in Financial Management

The Department of Finance at Mays Business School offers a non-thesis program leading to the degree of Master of Financial Management (MFM). This degree is open only to students who have been admitted to a high-impact learning program at Mays Business School. The designation of a high-impact learning program is made periodically by the Dean of Mays Business School. Currently, only students admitted to one of the following three programs qualify for admission to the MFM: (i) the Trading, Risk & Investments Program (TRIP), (ii) the Commercial Banking Program (CBP), and (iii) the Professional Program in Accounting (PPA). In turn, each of these three high-impact programs represent one of three possible academic tracks within the MFM.

Students interested in seeking admission to the MFM must first choose one of the three academic tracks (TRIP, CBP, PPA) and then contact the office that manages that particular track for additional information. Each track is responsible for setting its own admission criteria. Students interested in TRIP and CBP must contact an academic advisor within the Department of Finance. Students interested in the PPA must contact the PPA office in the Department of Accounting at Mays Business School.

Students applying for admission to the MFM are not required to take the GMAT, GRE, or any other standardized tests for admissions purposes, but these scores may be used to satisfy English Proficiency requirements.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 501)
- Degree Plan (p. 501)
- Credit Requirement (p. 501)
- Transfer of Credit (p. 501)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 501)
- Final Examination (p. 502)

Student's Advisory Committee

The MFM student's advisory committee consists of the Director of MFM program, who is a faculty member in the Department of Finance at Mays Business School. The Director has the responsibility of approving the proposed degree plans for MFM students. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be filed with the Office of Graduate and Professional Studies and approved by the MFM Director before the deadline imposed by the student's respective MFM track, and no later than dates announced in the OGAPS calendar of deadlines for graduation. Additional coursework may be added to the approved degree plan by petition to the MFM Director.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Financial Management degree. Of those, students are required to take a minimum of 18 semester credit hours in Finance.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer up to three credit hours upon the advice of the Director of the MFM and with the approval of the Office of Graduate and Professional Studies. A graduate and/or upper-level undergraduate course taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

The following limitations apply to all courses that may be used toward meeting credit-hour requirements for the MFM.

1. The maximum number of credit hours which may be considered for transfer credit is three credit hours. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, and 690 may not exceed 9 credit hours
 - A maximum of 4 hours of 684 (Professional Internship) and/or
 - Up to 8 hours of 685 (Directed Studies), and

- Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final oral examination is not required for the Master of Financial Management degree.

Additional Requirements

Additional Requirements

- Residence (p. 502)
- Time Limit (p. 502)
- Foreign Languages (p. 502)
- Application for Degree (p. 502)

Residence

A student must complete all 36 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Financial Management.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Time Limit

All degree requirements must be completed within a period of three consecutive years for the degree to be granted. A course will be considered valid until three years after the end of the semester in which it is taken. Graduate credit for coursework which is more than three calendar years old at the time of intended graduation may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Financial Management degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Real Estate in Land Economics and Real Estate

Through its Department of Finance, the Mays Business School offers a non-thesis program leading to the degree of Master of Real Estate (MRE). This program of study in the Mays Business School uses appropriate education offerings throughout the University.

This professional curriculum is primarily designed to provide broad preparation for the practice of commercial real estate consulting, valuation, brokerage, development, lending and capital markets, investment, asset management and corporate real estate. In addition, a student may avail himself/herself of traditional University strengths in a wide range of supporting areas and departments to prepare for careers in these fields.

Most holders of a bachelor's degree in business administration will normally be prepared to go directly into graduate courses leading to the MRE degree. Others may be required to take preprofessional courses to fulfill prerequisites and the Common Body of Knowledge (CBK) requirements.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 502)

Degree Plan (p. 502)

Credit Requirement (p. 503)

Transfer of Credit (p. 503)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 503)

Final Examination (p. 503)

Student's Advisory Committee

The MRE student's advisory committee consists of the Director of the MRE Program, who is a member of the Department of Finance at Mays Business School. The Director has the responsibility of approving the proposed degree plans for MRE students. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be filed with the Office of Graduate and Professional Studies and approved by the MRE Director before the deadline imposed by the student's college and no later than dates announced in the OGAPS calendar of deadlines for graduation. It is recommended that students who are planning to take additional courses after the completion of the Mays MRE core courses meet with the academic counselor in the Mays MRE Program office. Additional coursework may be added to the approved degree plan by petition. No changes can be made to the degree plan once the student's Request

for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Real Estate degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 3 hours of 684 (Professional Internship) and/or
 - Up to 4 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final oral examination is not required for the Master of Real Estate degree.

Additional Requirements

Additional Requirements

- Residence (p. 503)
- Time Limit (p. 504)
- Foreign Languages (p. 504)
- Internship or Practicum (p. 504)
- Application for Degree (p. 504)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Real Estate degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the

student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Real Estate degree.

Internship or Practicum

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for an examination. An examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Information and Operations Management

<http://mays.tamu.edu/info>

Head: R. Metters

Graduate Advisor: Aaron Becker

The Department of Information and Operations Management offers a Master of Science in Management Information Systems (MS-MIS) and a PhD in Supply Chain Management. In addition, the department offers coursework supporting Mays Business School's MBA degrees and the Professional Program.

Students admitted to the Professional Program offered by the Department of Accounting may elect to participate in the five-year integrated MS-MIS program. Graduates of this program receive a Bachelor of Business Administration degree in Accounting and a Master of Science degree in Management Information Systems.

Masters Program

The MS-MIS degree program prepares students to enter this exciting and dynamic career field. It provides students with a solid technical information systems foundation and appropriate business skills that enables graduates to immediately contribute to solving business problems. Graduates are highly valued and respected in the workforce and are sought by first class employers.

The program is equally beneficial for students with an information systems background as well as those wishing to leverage and enhance their undergraduate degree from another field. The MS-MIS degree

is an ideal complement for any undergraduate student with a degree in business, engineering, science, math or other analytically-oriented majors. The MS-MIS degree can jump start your career and provide fast-track opportunities not available to those with only an undergraduate degree.

The 21-month MS-MIS degree program requires 36 credit hours and produces graduates who are both business analysts (i.e., professionals who understand business) and information system specialists (i.e., professionals who can implement information systems strategies). Graduates of the program possess the skills to meet challenges and opportunities created by rapidly evolving information technology. Our graduates make business better.

Prerequisites for the MS-MIS degree include a course in each of the following:

- Computer Programming (any language)
- Databases
- Systems Analysis and Design
- Business Data Communications

Doctoral Program

The doctoral program in operations and supply chain management is strongly research oriented and has a systems point of view. It stresses the relationships among the functional business areas and the importance of effective decision making with the goal of developing professionals who are well grounded in underlying theory in their disciplines and who have refined problem-solving capabilities.

The program has three primary objectives:

1. Provide comprehensive knowledge of business concepts and practices in functional business areas to support teaching and research interests;
2. Develop advanced competencies for conducting quality research, directing research of others, and communicating research findings through teaching and writing; and
3. Prepare candidates for the varied responsibilities of academic careers or for positions requiring similar research and analytical skills.

Additional information, including specific departmental requirements, may be obtained by contacting the department graduate advisors or the Office of the Dean, Graduate School of Business.

Faculty

Abbey, James D, Assistant Professor
Information & Operations Mgmt
PHD, The Pennsylvania State University, 2013

Agrawal, Anupam, Associate Professor
Information & Operations Mgmt
PHD, INSEAD France, 2008

Angelus, Alexandar, Assistant Professor
Information & Operations Mgmt
PHD, Stanford University, 1997

Arreola-Risa, Antonio, Associate Professor
Information & Operations Mgmt
PHD, Stanford University, 1989

Becker, Aaron C, Clinical Associate Professor
Information & Operations Mgmt
PHD, University of Oklahoma, 2009

Boone II, Edward F, Lecturer
Information & Operations Mgmt
MS, Pennsylvania State University, 2000

Curtsinger, Wanda F, Lecturer
Information & Operations Mgmt
PHD, Morehead State U., 2007

Darcey Louise, senior lecturer
Information & Operations Mgmt
PHD, Texas A&M University, 1974

Geismar, Harry N, Professor
Information & Operations Mgmt
PHD, University of Texas at Dallas, 2003

George, Jordana, Clinical Assistant Professor
Information & Operations Mgmt
PHD, Baylor University, 2019

Gomillion, David L, Clinical Assistant Professor
Information & Operations Mgmt
PHD, Florida State University, 2013

Hale, Trevor Schuyler, Clinical Professor
Information & Operations Mgmt
DEN, Texas A&M University, 1997

Heim, Gregory R, Professor
Information & Operations Mgmt
PHD, University of Minnesota, Twin Cities, 2000

Jamieson III, Thomas V, Executive Professor
Information & Operations Mgmt
PHD, Texas A&M University, 1978

Jasperson, Jon L, Clinical Professor
Information & Operations Mgmt
PHD, Florida State University, 1999

Jola Sanchez, Andres Fernando, Assistant Professor
Information & Operations Mgmt
DBA, Indiana University, 2018

Ketzenberg, Michael E, Associate Professor
Information & Operations Mgmt
PHD, University of North Carolina at Chapel Hill, 2000

Koufteros, Xenophon, Professor
Information & Operations Mgmt
PHD, University of Toledo, 1995

Li, Ying, Clinical Associate Professor
Information & Operations Mgmt
PHD, University of Michigan, 2005

Metters, Richard D, Professor
Information & Operations Mgmt
PHD, University of North Carolina - Chapel Hill, 1993

Norton, John M, Senior Lecturer
Information & Operations Mgmt
BBA, Baylor University, 1981

Oliva, Rogelio, Professor
Information & Operations Mgmt
PHD, MIT, 1996

Pappu, Madhav, Clinical Assistant Professor
Information & Operations Mgmt
PHD, University of Tennessee, 1999

Rangan, Sudarsan, Clinical Associate Professor
Information & Operations Mgmt
PHD, University of Alabama, 2008

Sen, Arun, Professor
Information & Operations Mgmt
PHD, Pennsylvania State University, 1979

Sen, Ravi, Associate Professor
Information & Operations Mgmt
PHD, University of Illinois at Urbana - Champaign, 2003

Shetty, Bala, Professor
Information & Operations Mgmt
PHD, Southern Methodist University, 1985

Sriskandarajah, Chelliah, Professor
Information & Operations Mgmt
PHD, L'Institut National Polytechnique de Grenoble, 1986

Stauffer, Jon M, Assistant Professor
Information & Operations Mgmt
PHD, Indiana University, Kelley School of Business, 2016

Toso De Araujo, Andre Luis, Clinical Assistant Professor
Information & Operations Mgmt
PHD, The University of Oklahoma, 2004

Whitcomb, Della K, Senior Lecturer
Information & Operations Mgmt
MS, Texas A&M University, 1998

Whitten, Gary D, Clinical Professor
Information & Operations Mgmt
PHD, Louisiana Tech University, 2004

scialdone, Michael, Clinical Associate Professor
Information & Operations Mgmt
PHD, Syracuse University, 2014

Masters

- Master of Science in Management Information Systems (p. 505)

Certificates

- Business Intelligence and Analytics Certificate

Master of Science in Management Information Systems

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master

of Science in Management Information Systems will pursue a non-thesis option.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 506)
- Degree Plan (p. 506)
- Credit Requirements (p. 507)
- Transfer of Credit (p. 507)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 507)
- Non-Thesis Option (p. 507)

Student's Advisory Committee

The MS degree in Management Information Systems (MS-MIS) is a **non-thesis** degree. After receiving admission to graduate studies and enrolling for coursework, the student will be assigned a committee chair.

The person assigned will be the faculty member who serves as the academic advisor for the MS-MIS program.

Degree Plan

The student, in consultation with the committee chair, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies. The target deadline for filing the degree plan should be the end of the spring semester of the first year of study.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree in Management Information Systems should designate "**MISY non-thesis**" on the official degree plan as the program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the committee chair to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Science degree in Management Information Systems.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:

- Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 4 hours of 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. No credit hours of 691 (Research) may be used.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

The Final Examination is not required for the Master of Science in Management Information Systems.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the

individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 508)
- Continuous Registration (p. 508)
- Time Limit (p. 508)
- Foreign Languages (p. 508)
- Application for Degree (p. 508)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Business Intelligence and Analytics - Certificate

Mays Business School offers a Certificate in Business Intelligence and Analytics to **graduate** students at Texas A&M University. This certificate is attractive to students with an inquisitive interest in databases, data cultivation, and extracting hidden information. Students pursuing this certificate should have a base interest in programming and data management, as well as some technical background and an interest in statistical applications. Advanced coursework in calculus, statistics, and computing is strongly recommended.

The courses included in the certificate are not offered every semester.

Students should allow multiple semesters to complete all of the certificate requirements.

Non-business students will need assistance registering for courses within Mays Business School. To request enrollment in one of these certificate courses, non-business students should submit a wait list request (<http://www-info.tamu.edu/INFOWait/>). Note in the comments area of the request that the certificate is being pursued.

Direct questions regarding the certificate to INFOStudentServices@mays.tamu.edu.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------|-------------------------------------------|-----------------------|
| ISTM 637 | Data Warehousing | 3 |
| ISTM 650 | Business Data Mining | 3 |
| Select two from the following: | | 6 |
| FINC 649 | Financial Modeling | |
| ISTM 689 | Special Topics in... ¹ | |
| SCMT 650 | Applied Predictive Analytics for Business | |
| SCMT 689 | Special Topics in... ¹ | |
| Total Semester Credit Hours | | 12 |

¹ As approved by Academic Advisor.

Department of Management

<http://mays.tamu.edu/mgmt>

Head: W. Boswell

PhD Advisor: S. Courtright

MS Advisor: R. Chandler

The Department of Management offers graduate studies leading to MS and PhD degrees and coursework supporting the Mays Business School's MBA degree.

The MS degree program in human resource management consists of 37 credit hours, and up to 6 additional credit hours depending on prior completion of necessary preparatory coursework. The PhD program

emphasizes coursework in organizational behavior/human resource management and strategic management.

Additional information, including specific departmental requirements, may be obtained by contacting the master's student advisor or the doctoral student advisor in the Department of Management.

Faculty

Alipour, Kent K., Visiting Assistant Professor
Management
PHD, The Pennsylvania State University, 2018

Barrick, Murray R, University Distinguished Professor
Management
PHD, University of Akron, 1988

Bierman, Leonard, Professor
Management
JD, University of Pennsylvania Law School, 1978

Boivie, Steven R, Associate Professor
Management
PHD, University of Texas at Austin, 2006

Boswell, Wendy R, Professor
Management
PHD, Cornell University, 2000

Buenger, Victoria L, Clinical Professor
Management
PHD, Texas A&M University, 1990

Call, Matthew L, Assistant Professor
Management
PHD, University of South Carolina, 2016

Cannella Jr, Albert A, Professor
Management
PHD, Columbia University, 1991

Chambers Bridgette, Executive Professor
Management
PHD, NorthCentral University, 2018

Chandler, Ronald S, Lecturer
Management
MS, Texas A& M University, 2001

Courtright, Stephen H, Associate Professor
Management
PHD, University of Iowa, 2012

Devers, Cynthia E, Associate Professor
Management
PHD, Michigan State University, 2003

Dwivedi, Priyanka, Assistant Professor
Management
PHD, The Pennsylvania State University, 2017

Eden, Lorraine A, Professor
Management
PHD, Dalhousie University, Canada, 1976

Flint, Gerald David, Clinical Professor
Management
PHD, Texas A&M University, 1997

Griffin, Ricky W, University Distinguished Professor
Management
PHD, University of Houston, 1978

Hailey, Camille E, Senior Lecturer
Management
JD, South Texas College of Law, 1993

Howard, Michael D, Associate Professor
Management
PHD, University of Washington, 2012

Ireland, Robert D, University Distinguished Professor
Management
PHD, Texas Tech University, 1977

King-Metters, Kathryn H, Executive Professor
Management
PHD, Capella University, 2007

Koopman, Joel E, Assistant Professor
Management
PHD, Michigan State University, 2014

Lester, Richard H, Clinical Professor
Management
PHD, Texas A&M University, 2003

Lewis Jr, Donald H, Executive Professor
Management
MBA, Texas A&M International University, 1992

McGreal, Paul Eugene, Visiting Professor
Management
LLM, Yale Law School, 1994
JD, Dedman School of Law, Southern Methodist University, 1992

Pace William, Executive Professor
Management
PHD, Capella University, 2017

Paetzold, Ramona L, Professor
Management
JD, Indiana University, 1990
PHD, Indiana University, 1979

Panina, Daria, Clinical Associate Professor
Management
PHD, Rutgers University, 2002

Pustay, Michael W, Professor
Management
PHD, Yale University, 1973

Schwartz, Mark, Executive Professor
Management
JD, Baylor University School of Law, 1983

Swim Jr, Keith D, Clinical Associate Professor
Management
JD, Texas Tech University, 1980

Tihanyi, Laszlo, Professor
Management
PHD, Indiana University - Bloomington, 1996

Welch, Ben D, Clinical Professor
Management
PHD, Texas A&M University, 1990

Wesner Bradley, Visiting Clinical Assistant Professor
Management
PHD, Texas A&M University, 2011

Wesson, Liesl S, Senior Lecturer
Management
MS, Texas A&M University, 1992

Wesson, Michael J, Associate Professor
Management
PHD, Michigan State University, 2002

Withers, Michael C, Associate Professor
Management
PHD, Arizona State University, 2011

Zapata, Cindy P, Associate Professor
Management
PHD, University of Florida, 2008

Zardkoohi, Asghar, Professor
Management
PHD, Virginia Polytechnic Institute and State University, 1977

Masters

- Master of Science in Entrepreneurial Leadership (p. 510)
- Master of Science in Human Resource Management (p. 512)

Doctoral

- Doctor of Philosophy in Management (p. 515)

Certificates

- Entrepreneurship Certificate (p. 521)

Master of Science in Entrepreneurial Leadership

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Entrepreneurial Leadership will pursue a non-thesis option.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1
- Meet with departmental graduate advisor to plan course of study for first semester.

When: Before first semester registration.

Approved by: Graduate advisor or chair of the intercollegiate faculty.

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdpps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 511)
- Degree Plan (p. 511)
- Credit Requirements (p. 511)
- Transfer of Credit (p. 511)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 511)
- Non-Thesis Option (p. 512)

Student's Advisory Committee

The MS degree in Entrepreneurial Leadership (ENLD) is a non-thesis degree. The student's advisory committee consists of the Director of MS-ENLD program and the Graduate Faculty representative, who is a faculty member in the Department of Management at Mays Business School. The Director and Faculty representative have the responsibility of approving the proposed degree plans for MS-ENLD students. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

The Final Examination is not required for the Master of Science in Entrepreneurial Leadership.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

- Residence (p. 512)
- Continuous Registration (p. 512)
- Time Limit (p. 512)
- Foreign Languages (p. 512)
- Application for Degree (p. 512)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Human Resource Management

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Human Resource Management will pursue a non-thesis option.

Steps to Fulfill Master's Degree Requirements

| | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. | |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. | |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . | |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 513)
- Degree Plan (p. 513)
- Credit Requirements (p. 514)
- Transfer of Credit (p. 514)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 514)
- Non-Thesis Option (p. 514)

Student's Advisory Committee

The MS degree in Human Resource Management (HRMT) is a non-thesis degree. The student's advisory committee consists of the Director of MS-HRMT program and the Graduate Faculty representative, who is a faculty member in the Department of Management at Mays Business School. The Director and Faculty representative have the responsibility of approving the proposed degree plans for MS-HRMT students. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 37 semester credit hours of approved coursework is required for the Non-Thesis Option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas

A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified are the same as for the thesis option degree.

Non-Thesis Option

A final comprehensive examination is not required for the MS in Human Resource Management non-thesis option.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 515)
- Continuous Registration (p. 515)
- Time Limit (p. 515)
- Foreign Languages (p. 515)
- Application for Degree (p. 515)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time

limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Management

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete coursework detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 516)
- Degree Plan (p. 517)
- Transfer of Credit (p. 517)
- Research Proposal (p. 517)
- Examinations (p. 518)
 - Preliminary Examination (p. 518)
 - Preliminary Examination Format (p. 518)
 - Preliminary Examination Scheduling (p. 518)
 - Report of Preliminary Examination (p. 518)
 - Retake of Failed Preliminary Examination (p. 519)
 - Final Examination (p. 519)
 - Report of Final Examination (p. 519)
- Dissertation (p. 519)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 520)
- Time Limit (p. 520)
- Continuous Registration (p. 520)
- Admission to Candidacy (p. 520)
- Languages (p. 520)
- 99-Hour Cap on Doctoral Degree (p. 520)
- Application for Degree (p. 521)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Entrepreneurship - Certificate

A certificate in entrepreneurship and technology commercialization provides a base understanding of new business planning; key issues encountered when developing commercial applications for new technical discoveries; the general legal aspects of intellectual property protection; fundamental business start-up and securities laws; and the management of creativity and innovation in organizational settings. This certificate is open to any graduate student at Texas A&M University.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------------------|------------------------------------------|-----------------------|
| Select four courses from the following: | | 12 |
| MGMT 632 | Technology Commercialization | |
| MGMT 637 | Foundations of Entrepreneurship | |
| MGMT 638 | Strategic Entrepreneurship | |
| MGMT 639 | Negotiations in Competitive Environments | |
| MGMT 640 | Managing for Creativity and Innovation | |
| MGMT 658 | Managing Projects | |
| MGMT 675 | Leadership in Organizations | |

FINC 644 Funding New Ventures

Total Semester Credit Hours

12

Department of Marketing

<http://mays.tamu.edu/mktg>

Head: M. Houston

Graduate Advisor: S. McDaniel

The Department of Marketing offers graduate studies leading to MS and PhD degrees and coursework supporting the Mays Business School's MBA, PMBA and EMBA degrees. These programs provide training for students interested in marketing careers.

The MS degree program consists of 36 credit hours (provided students have the necessary preparatory coursework) and is designed to give a greater degree of specialization in marketing than the MBA program. The PhD program is designed to prepare students for careers in research and teaching as well as specialized staff positions in public and private organizations.

Additional information, including specific departmental requirements, may be obtained by contacting the department or the Office of the Dean, Mays Business School.

Faculty

Berry, Leonard L, University Distinguished Professor
Marketing
PHD, Arizona State University, 1968

Busch, Paul S, Professor
Marketing
PHD, The Pennsylvania State University, 1974

Dikec, Altay, Clinical Assistant Professor
Marketing
PHD, Konkuk University, 2012
PHD, Konkuk University - Miller Graduate School of Business, 2012

Griffith, David Andrew, Professor
Marketing
PHD, Kent State University, 1997

Jones III, Eli, Professor
Marketing
PHD, Texas A&M University, 1997

Kan, Christina S, Assistant Professor
Marketing
PHD, University of Colorado-Boulder, 2015

Lampo, Sandra S, Clinical Associate Professor
Marketing
PHD, Texas A&M University, 2001

Liu, Yan, Associate Professor
Marketing
PHD, Purdue University, 2010

McDaniel, Stephen W, Professor
Marketing
PHD, University of Arkansas, 1979

Mittal, Chiraag, Assistant Professor
Marketing
PHD, University of Minnesota, 2016

Olson, Nicholas John, Assistant Professor
Marketing
PHD, University of Minnesota, 2018

Parish, Janet T, Clinical Professor
Marketing
PHD, University of Alabama, 2002

Pride, William M, Professor
Marketing
PHD, Louisiana State University and A&M College, 1972

Ramanathan, Suresh, Professor
Marketing
PHD, New York University, 2002

Shankar, Venkatesh, Professor
Marketing
PHD, Northwestern University, 1995

Sharma, Amalesh, Assistant Professor
Marketing
PHD, Georgia State University, 2017

Sorescu, Alina, Professor
Marketing
PHD, University of Houston, 2002

Sreenivasan, Akshaya, Clinical Assistant Professor
Marketing
PHD, The Pennsylvania State University, 2016

Sridhar, Shrihari, Associate Professor
Marketing
PHD, University of Missouri-Columbia, 2009

Troy, Alesia C, Clinical Professor
Marketing
PHD, Texas A&M University, 1997

Varadarajan, Poondi, University Distinguished Professor
Marketing
PHD, University of Massachusetts Amherst, 1979

Yadav, Manjit S, Professor
Marketing
PHD, Virginia Tech, 1990

Zimmer, Mary R, Clinical Associate Professor
Marketing
PHD, University of Texas, 1985

Masters

- Master of Science in Marketing (p. 522)

Certificates

- Analytics Certificate (p. 524)

Master of Science in Marketing

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students in the Master of Science in Marketing will pursue a non-thesis option.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 523)
- Degree Plan (p. 523)
- Credit Requirements (p. 523)
- Transfer of Credit (p. 523)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 523)
- Non-Thesis Option (p. 524)

Student's Advisory Committee

The MS-MKTG student's advisory committee consists of the Director of MS-MKTG program, who is a faculty member in the Department of Marketing at Mays Business School. The Director has the responsibility of approving the proposed degree plans for MS-MKTG students. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be filed with the Office of Graduate and Professional Studies and approved by the MS-MKTG director before the deadline imposed by the MS-MKTG program and no later than

dates announced in the OGAPS calendar of deadlines for graduation.

Additional coursework may be added to the approved degree plan by petition to the MS-MKTG director.

Credit Requirement

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

The Final Examination is not required for the Master of Science in Marketing.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 524)
- Continuous Registration (p. 524)
- Time Limit (p. 524)

- Foreign Languages (p. 524)
- Application for Degree (p. 524)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Analytics - Certificate

The Department of Marketing offers a Certificate in Analytics.

Program Requirements

Required Courses:

| Code | Title | Semester Credit Hours |
|-----------------------------|------------------------------------|-----------------------|
| MKTG 625 | Marketing Analytics I | 3 |
| MKTG 626 | Marketing Analytics II | 3 |
| MKTG 630 | Marketing Analytics and Consulting | 3 |
| MKTG 635 | Marketing Analytics and Pricing | 3 |
| Total Semester Credit Hours | | 12 |

College of Dentistry

Administrative Officers

Dean - Lawrence E. Wolinsky, Ph.D, D.M.D.

Associate Dean, Research and Graduate Studies - Larry L. Bellinger, Ph.D.

Executive Director, Facilities Services and Planning - Dale A. Christensen, M.B.A.

Associate Dean, Academic Affairs - Paul C. Dechow, Ph.D.

Associate Dean, Student Affairs & Student Diversity - Ernie Lacy, D.D.S.

Associate Dean, Clinical Affairs - Stephen J. Griffin, D.D.S.

Executive Director, Recruitment & Admissions - Barbara H. Miller, D.D.S., M.S.

Executive Director, Communications, Institutional Advancement and Alumni Affairs - Susan Mitchell Jackson, M.A.

Associate Dean, Finance and Administration - Juanna S. Moore, C.P.A.

Admission Information (p. 33)

A Career in Dentistry

You should speak to the predental advisor on your campus, Admission Offices of Dental Schools, the family dentist, other dentists in general practice and those involved in the various fields of dentistry such as public health, dental research, etc. Observation in the office of a dentist is required. Information is also available from the American Dental Association (<http://www.ada.org>), and the American Dental Education Association (<http://www.adea.org>).

Preparing for a Career in Dentistry if you are in High School

High school students should take courses that will prepare them for admission to the predental college of their choice. In general, high school courses should include Biology, Chemistry, Mathematics, English, History, Speech and courses that involve the development of hand skills.

Choosing a College as a Predental Student

We do not recommend specific colleges. The college must be accredited and those having an active predental advisory committee are preferred.

The College of Dentistry provides complete information about admission requirements to predental advisors and to predental students. Counseling is available by phone.

College Courses to Take

The College of Dentistry requires a minimum of 90 semester hours, however, most students complete a baccalaureate degree before coming to the college. A grade of C or better is required for all prerequisite courses.

As outlined in the College Bulletin, an applicant must include in the required hours:

- Six semester hours of English
- Eight semester hours of General Chemistry
- Eight semester hours of Organic Chemistry
- Eight semester hours of Physics
- Three semester hours of Biochemistry
- Fourteen semester hours of Biology – 12 hours of lecture and 2 hours of formal laboratory
- Three semester hours of Statistics (from Math or Statistics Department) or Biostatistics

No course should be planned for Summer Session 2 of year of entry as it conflicts with the start date.

Suggested Elective Courses

Anatomy, Physiology, Microbiology, Neuroscience, Histology, Cellular and Molecular Biology, Immunology, Embryology and Biochemistry II are suggested to strengthen the student's science background.

Small Business Management, Personal Finance, Reading Improvement, Mechanical Drawing, Studio Art, and Hand Crafts will aid in the business and technical aspects of a dental practice. Courses in Speech, Psychology and Sociology will help improve interpersonal communication skills for positive interaction with other individuals in our diverse society.

Preferred Major Fields of Study

Although we do not require a specific major, the majority of successful applicants have majored in the Biological or Biomedical Sciences. The applicant must perform well in the science courses including upper division hours and should be aware of the competition with other students who have taken more than the required number of hours of science especially biology. The well-rounded predental education will include some liberal arts courses along with science courses.

Academic Calendar

The College of Dentistry operates on a semester system with new classes beginning only once a year. A current calendar is available upon request.

Cost to Attend

The tuition and fees for the student in the college are recommended by the administration and are approved by the Board of Regents and may be adjusted as economic conditions warrant.

Estimates for 2017-2018

| | |
|------------------------------------|---------|
| Texas resident, per semester | \$2,700 |
| Nonresident, per semester | \$8,100 |
| Designated Tuition, per semester | \$3,744 |
| Differential Tuition, per semester | \$2,700 |

| | |
|------------------------------------------|---------|
| Summer Clinic Fee (D3 and D4 years only) | \$500 |
| Instruments Leasing, per year | \$5,750 |

Tuition refund policy

Tuition refund policy is available on request.

To view the Cost of Attendance (COA) estimate provided by the Financial Aid Office, please visit their webpage <http://financialaid.tamu.edu/Home.aspx> and select the College of Dentistry.

Students are discouraged from holding any outside employment which may be detrimental to the pursuit of their education. In no case may a student accept a position which conflicts with regularly scheduled school hours. When scholastic progress is questionable, students may be asked to discontinue outside work.

Loan and Scholarship Programs

The college participates in several types of loan and scholarship programs. Students are classified as independent for consideration in professional school so aid is available based upon your documented need. Students complete FAFSA and submit requests for aid to the Office of Student Aid.

Attrition Rate

Because of the intense efforts in selecting only highly qualified students, few students fail to complete the programs.

Summer Predental Programs

A Summer Predental Enrichment Program exists to strengthen academic background, introduce the profession of dentistry, improve study skills and increase readiness for admission to Dental School. For information, contact the Director of Student Development, or visit the Office of Student Development (<https://dentistry.tamhsc.edu/student-development>).

Opportunities Beyond General Practice

Most DDS graduates are in the private practice of dentistry. There is also a need for dentists who are interested in scientific research and teaching. Specialty areas in dentistry include: Advanced Education in General Dentistry (<https://dentistry.tamhsc.edu/aegd>), Dental Public Health (<https://dentistry.tamhsc.edu/public-health/graduate-program.html>), Endodontics (<https://dentistry.tamhsc.edu/endodontics/training.html>), Oral and Maxillofacial Pathology (<https://dentistry.tamhsc.edu/diagnostic/training/oral-pathology.html>), Oral and Maxillofacial Radiology (<https://dentistry.tamhsc.edu/diagnostic/training/oral-radiology.html>), Oral and Maxillofacial Surgery (<https://dentistry.tamhsc.edu/oral-surgery/residency.html>), Orthodontics (<https://dentistry.tamhsc.edu/orthodontics>), Pediatric Dentistry (<https://dentistry.tamhsc.edu/pediatric-dentistry/residency.html>), Periodontics (<https://dentistry.tamhsc.edu/periodontics/graduateprograms.html>), and Prosthodontics (<https://dentistry.tamhsc.edu/restorative/graduateprosthodontics.html>). Competition for admission to these graduate programs is high. Dentists also serve in public health agencies, educational institutions, government services and industrial clinics.

Departments

Departments

Department of Biomedical Sciences (p. 538)
 Department of Comprehensive Dentistry (p. 539)
 Department of Diagnostic Sciences (p. 541)
 Department of Endodontics (p. 544)
 Department of Oral and Maxillofacial Surgery (p. 545)
 Department of Orthodontics (p. 547)
 Department of Pediatric Dentistry (p. 549)
 Department of Periodontics (p. 551)
 Department of Public Health Sciences (p. 553)

Interdepartmental Programs

- Doctor of Philosophy in Oral Biology (p. 532)
- Master of Science in Oral Biology (p. 528)

First Professional Doctoral

- Doctor of Dental Surgery in Dentistry (p. 526)

Interdepartmental Programs

Masters

- Master of Science in Oral Biology (p. 528)

Doctoral

- Doctor of Philosophy in Oral Biology (p. 532)

First Professional Doctoral

- Doctor of Dental Surgery in Dentistry (p. 526)

Doctor of Dental Surgery

The program leading to the degree of Doctor of Dental Surgery (DDS) is designed to develop broadly competent practitioners and encourages both clinical and basic science research in order to instill an appreciation of biomedical research and a spirit of inquiry in each student. The college recognizes the need to support excellence in its educational programs by acquiring and maintaining a highly qualified faculty and students, excellent physical facilities and a competency-based curriculum that is contemporary, comprehensive and efficient. The program in Dentistry is a four year curriculum leading to the Doctor of Dental Surgery degree.

College of Dentistry Admission Information (p. 33)

The College of Dentistry is a synergistic environment where students learn life lessons – in addition to dental medicine – from a diverse patient population. These patients help prepare students for the real-life challenges and opportunities awaiting them upon graduation.

Since its founding, the college has graduated more than 9,000 dentists and dental hygienists. The college is known internationally for producing excellent clinicians. More than half of all the dentists in the Dallas/Fort Worth area received their dental education at the college, and nearly one-third of all dentists in Texas are Texas A&M University College of Dentistry graduates.

Our Mission

The College of Dentistry shapes the future of dentistry by developing exemplary clinicians, educators and scientists. We improve oral health by caring for the needs of a diverse community; seeking innovations in science, education and health care delivery; and serving as leaders in health professions education.

Our Vision

Following a century of excellence, the College of Dentistry will continue to be a leader in dental education by:

- Educating exemplary clinicians who deliver evidence-based care.
- Fostering translational and clinical research to improve patient care and delivery.
- Providing high quality service to students, patients, faculty, staff, alumni, and the public.
- Increasing access to dental care through cultural competence, diversity and community based care.

The Integrated Doctor of Dental Surgery (DDS) and Doctor of Philosophy (PhD)

The College of Dentistry offers an integrated dental and graduate research program leading to the awarding of a DDS and a PhD in Oral Biology. A dual-degree program has been available for over 15 years.

Admission Requirements DDS/PhD

Admission into this combined program requires that the applicant be accepted into the DDS program first, and then make a separate application to the PhD in Oral Biology program. The applicant completes the forms, including additional information on the areas of research interest, academic background, GRE scores, and prerequisite courses, academic honors, research experiences, and the names of three referees. Recommendation forms are specifically designed with questions on the applicant's scholarly aptitude, including intellectual, problem-solving, and creative skills. The style of questions resembles that used on National Institute of Health/National Institute of Dental and Craniofacial Research (NIH/NIDCR) Career Development applications. Applicants use Apply Texas, which is an all-inclusive site for graduate programs in the State of Texas. Selected applicants will be interviewed by the Oral Biology Graduate Program Director. Applicants must be accepted into both degree programs (DDS and PhD). For more information, go to Graduate Program in Oral Biology (<http://dentistry.tamhsc.edu/bms/gradprogram>) and see the section The Degree of Doctor of Philosophy in this catalog.

Program Requirements

Professional Curriculum

The professional curriculum in dental surgery is a four-year program.

First Year

| Fall | | Semester Credit Hours |
|----------|-----------------------------------------------------------------|-----------------------|
| DDDS 601 | Biological Foundations of Dentistry | 3.5 |
| DDDS 602 | Human Structure, Function and Disease I | 10 |
| DDDS 604 | Human Defenses and Responses to Infectious Disease ¹ | 3 |
| DDDS 605 | Pathologic Basis of Disease ¹ | 1 |
| DDDS 611 | Ethical Practice ¹ | 4 |

| | | |
|-----------------------|----------------------------------------------------|-----|
| DDDS 612 | Integrated Practice of Dentistry ¹ | 2.5 |
| DDDS 613 | Introduction to Restorative Dentistry ¹ | 6 |
| Semester Credit Hours | | 30 |

Spring

| | | |
|-----------------------|------------------------------------------|----|
| DDDS 603 | Human Structure, Function and Disease II | 12 |
| Semester Credit Hours | | 12 |

Second Year

Summer

| | | |
|-----------------------|-----------------------------------------------------------------------|-----|
| DDDS 702 | Oral Pathology ² | 2.5 |
| DDDS 712 | Integrated Practice of Dentistry ² | 8.5 |
| DDDS 713 | Integrated Practice of Dentistry - Preclinic ² | 12 |
| DDDS 721 | Preclinical Diagnostic Science ³ | 4 |
| DDDS 731 | Prevention and Management of Medical Emergencies in the Dental Office | 1 |
| DDDS 742 | Local Anesthesia and Nitrous Oxide/ Conscious Sedations | 1 |
| Semester Credit Hours | | 29 |

Fall

| | | |
|-----------------------|------------------------------------------------------------------------|------|
| DDDS 701 | Dental Pharmacology ¹ | 1.5 |
| DDDS 711 | Ethical Practice ¹ | 1.5 |
| DDDS 714 | General Dentistry Clinic ¹ | 5 |
| DDDS 741 | Basic Principles and Techniques of Exodontia and Dentoalveolar Surgery | 1 |
| DDDS 761 | Growth and Development Orthodontics ¹ | 1.5 |
| Semester Credit Hours | | 10.5 |

Spring

| | | |
|-----------------------|---------------------|-----|
| DDDS 771 | Pediatric Dentistry | 2.5 |
| Semester Credit Hours | | 2.5 |

Third Year

Summer

| | | |
|-----------------------|------------------------------------------------------------------|----|
| DDDS 812 | Integrated Practice of Dentistry ² | 6 |
| DDDS 814 | General Dentistry Clinic ² | 15 |
| DDDS 815 | Clinical Dentistry ³ | 5 |
| DDDS 817 | Surgical Interventions, Anesthesia and Pharmacology ² | 5 |
| Semester Credit Hours | | 31 |

Fall

| | | |
|-----------------------|-------------------------------------------|---|
| DDDS 811 | Ethical Practice ¹ | 2 |
| DDDS 821 | Clinical Principles of Patient Evaluation | 2 |
| DDDS 871 | Pediatric Dentistry ¹ | 2 |
| Semester Credit Hours | | 6 |

Spring

| | | |
|-----------------------|-----------------------------|---|
| DDDS 816 | Advanced Clinical Dentistry | 5 |
| Semester Credit Hours | | 5 |

Fourth Year

Summer

| | | |
|-----------------------|--------------------------------------------------------------------------------------|----|
| DDDS 901 | Board Review ² | 4 |
| DDDS 914 | General Dentistry Clinic ² | 30 |
| DDDS 915 | Comprehensive Care for Medically Compromised and Special Needs Patients ³ | 1 |
| Semester Credit Hours | | 35 |

| | | |
|-----------------------------|-----------------------------------------------------------------------|-----|
| Fall | | |
| DDDS 961 | Orthodontics IV Interdisciplinary and Clinical Topics in Orthodontics | 1 |
| DDDS 971 | Pediatric Dentistry | 1 |
| Semester Credit Hours | | 2 |
| Spring | | |
| DDDS 911 | Ethical Practice | 1 |
| Semester Credit Hours | | 1 |
| Total Semester Credit Hours | | 164 |

- ¹ Continues into Spring
² Continues into Fall and Spring
³ Continues into Fall

Students are required to complete a minimum of two Selective courses which can be taken in any semester. See advisor for a complete list of approved courses.

Master of Science in Oral Biology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students who are enrolled in a clinical specialty program will follow the Clinical MS Track in Oral Biology. Students not enrolled in a clinical specialty program will follow the Basic Science Track in Oral Biology. All MS students will complete a thesis, no matter which track they follow. Students in this combined certificate/MS program may take up to 20 hours of 691 Research as a part of their combined program.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: During first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |

| | | |
|----|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu and contact the Office of Research and Graduate Studies on the College of Dentistry campus. August and December graduation ceremonies are held only in College Station. The College of Dentistry holds their annual graduation ceremony in May of each year. Anyone who receives their degree during the year is welcome to participate in the May ceremony. |
|----|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 529)
- Degree Plan (p. 529)
- Credit Requirements (p. 530)
- Transfer of Credit (p. 530)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 530)
- Thesis Option (p. 530)
 - Final Examination/Thesis Proposal (p. 531)
 - Final Examination (p. 531)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member

or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPA.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
5. For the basic science track, student may take not more than 12 hours OBIO 687, OBIO 688, OBIO 691 and not more than 8 hours of a combination of OBIO 675, OBIO 676, OBIO 677, OBIO 678, OBIO 679.
6. For clinical track, students may take up 20 hours of OBIO 687, OBIO 688, OBIO 691. For remaining hours, a maximum of 2 hours can be Directed Readings (OBIO 677, OBIO 678, OBIO 679) and a maximum of 3 hours can be Current Topics (OBIO 675, OBIO 676).
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.
9. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
10. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty,

if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement

provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 531)
- Continuous Registration (p. 531)
- Time Limit (p. 532)
- Foreign Languages (p. 532)
- Application for Degree (p. 532)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Oral Biology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 533)
- Degree Plan (p. 533)
- Transfer of Credit (p. 534)
- Research Proposal (p. 534)
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Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 536)
- Time Limit (p. 537)
- Continuous Registration (p. 537)
- Admission to Candidacy (p. 537)
- Languages (p. 537)
- 99-Hour Cap on Doctoral Degree (p. 537)
- Application for Degree (p. 538)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Biomedical Sciences

The Department of Biomedical Sciences is a major locus for basic science and translational research at the College of Dentistry. Departmental faculty interests range widely within a central research focus of craniofacial biology. These research interests include:

1. tissue engineering and regeneration;
2. the genetics of tooth development;
3. the developmental biology of craniofacial tissues;
4. the mechanics of bone;
5. the analysis of craniofacial growth in mutant and transgenic animal models; and
6. neurophysiological and endocrine mechanisms of orofacial pain.

In addition to many well-outfitted individual laboratories, the Department provides access to analytical tools such as confocal microscopy, laser capture microscopy, scanning electron microscopy, real-time PCR, and microCT.

Departmental faculty provide all basic science instruction to dental and dental hygiene students, to graduate students in clinical specialty certificate programs, and to graduate students pursuing an MS or PhD in Oral Biology (both basic science track and clinical track).

Faculty

Bellinger, Larry L, Regents Professor
Biomedical Sciences
PHD, University of California at Davis, 1974

Benson, M D, Associate Professor
Biomedical Sciences
PHD, University of Michigan, 2000

Berry, Charles W, Professor
Biomedical Sciences
PHD, Baylor University College of Dentistry, 1973

Dechow, Paul C, Regents Professor
Biomedical Sciences
PHD, University of Chicago, 1980

Feng, Jian Q, Professor
Biomedical Sciences
PHD, University of Connecticut, 1991

Groppe, Jay C, Associate Professor
Biomedical Sciences
PHD, University of California at Santa Barbara, 1991

Honeyman, Allen L, Associate Professor
Biomedical Sciences
PHD, University of Kansas, 1988

Kesterke, Matthew J, Instructional Assistant Professor
Biomedical Sciences
PHD, University of Pittsburgh, 2016

Kramer, Phillip R, Professor
Biomedical Sciences
PHD, Texas A&M University, 1996

Liu, Xiaohua, Associate Professor
Biomedical Sciences
PHD, Tsinghua University, China, 2002

Logan, Shaun M, Instructional Assistant Professor
Biomedical Sciences
PHD, University of North Texas Health Science Center, 2009

Lu, Yongbo, Associate Professor
Biomedical Sciences
PHD, University of Missouri-Kansas City, 2007

Newman, Joseph T, Adjunct Associate Professor
Biomedical Sciences
PHD, University of Texas Medical School at San Antonio, 1973

Opperman, Lynne A, Regents Professor
Biomedical Sciences
PHD, University of the Witwatersrand, South Africa, 1985

Qin, Chunlin, Professor
Biomedical Sciences
PHD, Okayama University, 1998
DMD, Harbin Medical University, 1983

Reuben, Jayne S, Instructional Associate Professor
Biomedical Sciences
PHARM D, Florida A&M University, 2001

Ruest, Louisbruno, Associate Professor
Biomedical Sciences
PHD, McGill University, Montreal, Canada, 2002

Schneiderman, Emet D, Professor
Biomedical Sciences
PHD, University of Michigan - Ann Arbor, 1985

Svoboda, Kathy K, Professor
Biomedical Sciences
PHD, University of Nebraska Medical Center, 1982

Tao, Feng, Associate Professor
Biomedical Sciences
PHD, Fudan University, China, 2000
MD, Wannan Medical College, People's Republic of China, 1986

Umorin, Mikhail P, Instructional Assistant Professor
Biomedical Sciences
PHD, Baylor University, 2006

Varanasi, Venu G, Assistant Professor
Biomedical Sciences
DEN, University of Florida Gainesville, 2004

Wang, Jun, Research Assistant Professor
Biomedical Sciences
DDS, Sichuan University, 2016

Wang, Qian, Associate Professor
Biomedical Sciences
PHD, Chinese Academy of Sciences, 1998

Wang, Xiaofang, Assistant Professor
Biomedical Sciences
DDS, Fourth Military Medical University, China, 2003

Zhang, Hua, Instructional Assistant Professor
Biomedical Sciences
PHD, University of Missouri-Kansas City, 2010
MD, Qingdao Medical College, Qingdao, China, 1994

Department of Comprehensive Dentistry

Modern health care requires caring, competent primary care providers who place patient welfare above all other considerations. In dentistry, the general dentist fulfills that role. The traditional term “attending doctor” indicates such a doctor/patient relationship, and signifies the philosophy of the department that the general dentist is responsible for leading diagnostic, treatment planning, and therapeutic endeavors for all patients under his or her care.

The Department of Comprehensive Dentistry at the College of Dentistry conducts multidisciplinary instruction, research, patient care and preclinical instruction. The department also administers instruction in the disciplines of Dental Implants, Dental Materials, Dental Anatomy, Dental Occlusion and Professional Ethics. In a series of courses spread throughout the four years of the dental curriculum.

Preclinical and clinical educational programs operate within the context of the Simulation Clinic Laboratories and Clinics of the dental facilities.

The Department of Comprehensive Dentistry supports the following objectives:

- Developing a concern for the overall health of the patient.
- Providing comprehensive care in a professional manner.
- Practicing with a high degree of personal and professional integrity.

In addition to the undergraduate preclinical and clinical dental curriculum, the department also offers a 36-month combined MS degree in Oral Biology with a Certificate in Prosthodontics and a one year Advanced Education in General Dentistry (AEGD) certificate program.

Certificates

- Advanced Education in General Dentistry Certificate (p. 539)
- Prosthodontics Certificate (p. 540)

Advanced Education in General Dentistry - Certificate

The Department of Comprehensive Dentistry offers a one year Advanced Education in General Dentistry (<http://dentistry.tamhsc.edu/aegd>) (AEGD) certificate program. Applications are accepted from graduates of all American Dental Association accredited dental schools, which include those in the United States and Canada. Successful National Board Dental Examination scores are required. Potential students should

apply through the Postdoctoral Application Support Service (PASS). The deadline for application is September 1.

Interviews of selected applicants are scheduled in October and November for the class beginning in the summer of the following year.

The goal of the one-year AEGD certificate program is to expand the scope and depth of the dentist's clinical skills and didactic knowledge in order to be able to effectively provide comprehensive patient care to a wide range of population groups. Accordingly, the program is structured to allow students to exercise increasingly independent judgment beyond that expected in the DDS curriculum. The emphasis of the program is on diagnosis and treatment planning, as well as the coordination of clinical care for a large number of patients with multidisciplinary treatment plans. Predominantly clinically oriented, it does include a didactic component of approximately fifteen percent of scheduled time. Graduates of the AEGD program are awarded a certificate.

The **clinical** phase consists of experiences and instruction at a level beyond DDS training in the following areas: endodontics, periodontics, oral surgery, operative, fixed and removable prosthodontics, implants (surgical placement and restoration), a rotation in the graduate pediatric dental clinic, special care and medically compromised patients, and limited experience in orthodontics. Educationally qualified specialists in each of these areas participate in instruction and are always available for consultations.

The **didactic** component provides the student with a broad background from which sound clinical judgments can be made regarding diagnosis, treatment planning, and selection of the appropriate method of treatment for each individual patient. The didactic phase is scheduled on a regular basis and includes lectures, seminars, literature reviews, treatment planning conferences, clinical pathological conferences, and special projects. Examples of special projects may include table clinics, preparation of professional lectures or seminars, and submission of papers to professional journals. The following areas of interest are included in didactic sessions: oral pathology, oral medicine, physical evaluation, oral diagnosis and treatment planning, preventive dentistry, comprehensive control of pain and anxiety in the conscious patient, implants, geriatric dentistry, special care and medically compromised patients, asepsis, infection and hazard control, as well as in all the clinical areas listed in the previous paragraph. In addition, students will gain knowledge in practice management techniques, which will enable them to be prepared to deal with acquiring, managing, and coordinating different types of potential practice situations they may explore upon graduation.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|------------------------|-----------------------|
| AEGD 600 | Clinical Dentistry I | 0.0 |
| AEGD 601 | Clinical Dentistry II | 0.0 |
| AEGD 602 | Clinical Dentistry III | 0.0 |
| AEGD 603 | Implant Dentistry | 1.5 |
| AEGD 604 | Practice Management I | 1.5 |

| | | |
|-----------------------------|-----------------------------------------------------|------|
| AEGD 606 | Advanced Removable Prosthodontics | 1.5 |
| AEGD 607 | Advanced Fixed Prosthodontics | 1.5 |
| AEGD 608 | Advanced Clinical Periodontics | 1.5 |
| AEGD 611 | Advanced Clinical Endodontics I | 2.0 |
| AEGD 611 | Advanced Clinical Endodontics I | 2.0 |
| AEGD 614 | Advanced Dentistry for Special Care Patients | 1.5 |
| AEGD 615 | Treatment Planning Conference I | 1.5 |
| AEGD 616 | Treatment Planning Conference II | 1.5 |
| AEGD 617 | Treatment Planning Conference III | 1.5 |
| AEGD 618 | Current Literature Review I | 1.5 |
| AEGD 619 | Current Literature Review II | 1.5 |
| AEGD 620 | Current Literature Review III | 1.5 |
| AEGD 625 | Current Concepts in Operative Dentistry | 1.5 |
| OMFS 625 | Physical Diagnosis and Internal Medicine | 1.0 |
| PROS 651 | Implant Concepts and Techniques, Surgical Placement | 0.0 |
| Total Semester Credit Hours | | 24.5 |

Must complete 12 months of residency, total credit hours specified, any non-credit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Prosthodontics - Certificate

The combined Prosthodontic Certificate and MS in Oral Biology program provides progressive, post-graduate level instruction in clinical, laboratory, and didactic training, in fixed, removable, maxillofacial, and implant prosthodontics.

The interrelation of other medical/dental clinical specialties is also emphasized. The program integrates all facets of the biomedical sciences with a comprehensive clinical experience culminating in the award of a certificate in prosthodontics and an MS in Oral Biology. The program emphasizes the diagnostic process and current approaches to instrumentation and occlusion are stressed. Opportunities for implant placement and restoration of many implant systems also exist.

The program is three years in length and is accredited by the American Dental Association, Commission on Dental Accreditation. Successful completion leads to a specialty certificate and also qualifies the graduate for examination by the American Board of Prosthodontics. The flexibility of the program permits the postdoctoral student to progress optimally, developing and building upon his or her background. Thus, within the requirements of the program, the schedule for each student is developed individually to fulfill needs and objectives. The program goals and objectives are to:

1. produce a graduate who is competent/proficient in all aspects of clinical/laboratory prosthodontics and has the didactic knowledge on which to base treatment;
2. produce a graduate who will have the foundation for scientific inquiry, critical thinking, and problem solving;

3. prepare the graduate for successful certification by the American Board of Prosthodontics;
4. prepare and motivate the graduate for a lifetime of scholarly pursuit and active involvement in the specialty and profession; and
5. provide a program environment that is patient-centered, serves the students, faculty, and staff, and contributes to the advancement of knowledge.

The program is open to applicants with a DDS/DMD (or equivalent) only. All students are enrolled in the combined MS/Certificate program. Criteria for student selection includes: academic record, research and publication records, extracurricular achievement, honors and awards, class standing, professional experience and additional training, references, and the personal interview. The Graduate Record Exam (GRE) is required for all international applicants. English-language testing scores are required for international applicants from non-English-speaking countries. The National Board Dental Examination (NBDE) and Advanced Dental Admissions Test (ADAT) scores are required for all United States trained applicants. The program also participates in the Post Doctoral Matching Program for Prosthodontics (MATCH). For additional information about the Certificate in Prosthodontics, visit <https://dentistry.tamhsc.edu/restorative/graduateprosthodontics.html>.

Students in this combined certificate/MS program may take up to 20 hours of 691 Research as a part of their combined program.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|--------------------------------------------|-----------------------|
| PROS 600 | Mock Board Examination I | 0.0 |
| PROS 601 | Mock Board Examination II | 0.0 |
| PROS 602 | Mock Board Examination III | 0.0 |
| PROS 603 | Journal Club I | 0.0 |
| PROS 604 | Journal Club II | 0.0 |
| PROS 605 | Journal Club III | 0.0 |
| PROS 606 | Journal Club IV | 0.0 |
| PROS 607 | Journal Club V | 0.0 |
| PROS 608 | Journal Club VI | 0.0 |
| PROS 609 | Journal Club VII | 0.0 |
| PROS 610 | Journal Club VIII | 0.0 |
| PROS 611 | Journal Club IX | 0.0 |
| PROS 612 | Treatment Planning and Clinical Review I | 0.0 |
| PROS 613 | Treatment Planning and Clinical Review II | 0.0 |
| PROS 614 | Treatment Planning and Clinical Review III | 0.0 |
| PROS 615 | Treatment Planning and Clinical Review IV | 0.0 |
| PROS 616 | Treatment Planning and Clinical Review V | 0.0 |

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| PROS 617 | Treatment Planning and Clinical Review VI | 0.0 |
| PROS 618 | Treatment Planning and Clinical Review VII | 0.0 |
| PROS 619 | Treatment Planning and Clinical Review VIII | 0.0 |
| PROS 620 | Treatment Planning and Clinical Review IX | 0.0 |
| PROS 621 | Interdisciplinary Conferences I | 0.0 |
| PROS 622 | Interdisciplinary Conferences II | 0.0 |
| PROS 623 | Interdisciplinary Conferences III | 0.0 |
| PROS 624 | Interdisciplinary Conferences IV | 0.0 |
| PROS 625 | Interdisciplinary Conferences V | 0.0 |
| PROS 626 | Interdisciplinary Conferences VI | 0.0 |
| PROS 627 | Prosthodontic Topic Literature Review I | 0.5 |
| PROS 628 | Prosthodontic Topic Literature Review II | 1.0 |
| PROS 629 | Prosthodontic Topic Literature Review III | 1.0 |
| PROS 630 | Prosthodontic Topic Literature Review IV | 0.5 |
| PROS 631 | Prosthodontic Topic Literature Review V | 1.0 |
| PROS 632 | Prosthodontic Topic Literature Review VI | 1.0 |
| PROS 633 | Prosthodontic Topic Literature Review VII | 0.5 |
| PROS 634 | Prosthodontic Topic Literature Review VIII | 1.0 |
| PROS 635 | Prosthodontic Topic Literature Review IX | 1.0 |
| PROS 638 | Related Discipline Seminars I | 1.0 |
| PROS 639 | Related Discipline Seminars II | 1.0 |
| PROS 640 | Related Discipline Seminars III | 1.0 |
| PROS 641 | Related Discipline Seminars IV | 1.0 |
| PROS 642 | Advanced TMD and Occlusal Concepts and Treatments | 1.5 |
| PROS 643 | Clinical Teaching | 1.0 |
| PROS 645 | Advanced Implant Concepts and Treatment | 1.5 |
| PROS 648 | Occlusal Concepts and Techniques I | 1.5 |
| PROS 649 | Occlusal Concepts and Techniques II | 1.5 |
| PROS 650 | Geriatric Prosthodontics | 1.0 |
| PROS 651 | Implant Concepts and Techniques, Surgical Placement | 0.0 |
| PROS 652 | Clinical Prosthodontics I | 3.0 |
| PROS 653 | Clinical Prosthodontics II | 3.0 |
| PROS 654 | Advanced Clinical Prosthodontics I | 2.5 |
| PROS 655 | Advanced Clinical Prosthodontics II | 4.0 |
| PROS 656 | Advanced Clinical Prosthodontics III | 4.0 |
| PROS 657 | Advanced Clinical Prosthodontics IV | 2.5 |
| PROS 658 | Advanced Clinical Prosthodontics V | 5.0 |

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| PROS 659 | Advanced Clinical Prosthodontics VI | 5.0 |
| PROS 691 | Research | 2.0 |
| Total Semester Credit Hours | | 50.5 |

Must complete 35 months of residency, total credit hours specified, any noncredit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

The MS in Oral Biology (p. 528) is required, for which students must complete an additional 32 semester credit hours, conduct a research project, and successfully defend a written thesis.

If an applicant has previously been awarded a PhD, the Program Director may, at his/her discretion, allow the student to complete the required MS using the non-thesis option. The non-thesis MS in Oral Biology consists of 36 hours of courses.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Department of Diagnostic Sciences

The Department of Diagnostic Sciences has three divisions: Oral Diagnosis, Oral Pathology, and Oral Radiology, all with their own director and teaching programs.

Oral Diagnosis combines teaching with patient screening, evaluation, and treatment planning for the College of Dentistry. In addition, they staff a limited care treatment clinic.

Oral Pathology (<https://dentistry.tamhsc.edu/diagnostic/training/oral-pathology.html>) is responsible for the teaching of all general and oral pathology curriculum to first professional dental, dental hygiene, and graduate students. They provide consultation and biopsy services (<https://dentistry.tamhsc.edu/diagnostic/pathology-service.html>) to the College of Dentistry and the professional community. They offer a combined MS in Oral Biology and Certificate program in Oral and Maxillofacial Pathology.

Oral Radiology (<https://dentistry.tamhsc.edu/diagnostic/training/oral-radiology.html>) is responsible for all imaging service throughout the College of Dentistry. Additionally, imaging services are provided to patients referred by extramural dental providers through the Imaging Center. They offer a Certificate program in Oral and Maxillofacial Radiology.

Faculty

Budinskaya, Oksana V, Clinical Associate Professor
Diagnostic Sciences
DDS, Omsk State Medical Institute Russia, 1990

Cheng, Yi-Shing L, Professor
Diagnostic Sciences
PHD, Baylor University, 1999
DDS, KAOHSIUNG MEDICAL COLLEGE, 1990

Flint, Diane J, Associate Professor
Diagnostic Sciences
DDS, Baylor College of Dentistry, 1986

Gonzalez, Janet P, Adjunct Assistant Professor
Diagnostic Sciences
DDS, Texas A&M University Baylor College of Dentistry, 1991

Hennessy, Bernard J, Clinical Associate Professor
Diagnostic Sciences
DDS, University of Illinois Urbana, 1986

Kofford, Kelly R, Clinical Associate Professor
Diagnostic Sciences
DDS, Creighton University, 1978

Liang, Hui, Professor
Diagnostic Sciences
PHD, Beijing Medical University, 1992
DDS, Beijing Medical University, 1988

Murchison, David F, Adjunct Professor
Diagnostic Sciences
DDS, Baylor College of Dentistry, 1980

Naidu, Aparna G, Clinical Associate Professor
Diagnostic Sciences
DDS, Northwestern University Evanston, 2001

Nair, Madhu K, Professor & Director
Diagnostic Sciences
DMD, University of Gothenburg, 2003
DMD, University of Pittsburgh, 2000

Osinde Jr, Eliphas A, Adjunct Assistant Professor
Diagnostic Sciences
DDS, Texas A&M University Baylor College of Dentistry, 2015

Patel, Paras B, Assistant Professor
Diagnostic Sciences
DDS, Howard University, 2011

Payne, Michael B, Clinical Assistant Professor
Diagnostic Sciences
DDS, Baylor College of Dentistry, 1981

Puttaiah, Raghunath, Professor
Diagnostic Sciences
DDS, Bapuji Dental College and Hospital, 1983

Tahmasbi Arashlow, Mehrnaz, Clinical Assistant Professor
Diagnostic Sciences
DDS, University of Colorado, 2016
DDS, Kerman Univeristy, 2011

Wright Jr, John M, Professor
Diagnostic Sciences
DDS, West Virginia University, 1973

Certificates

- Oral and Maxillofacial Pathology Certificate (p. 542)
- Oral and Maxillofacial Radiology Certificate (p. 543)

Oral and Maxillofacial Pathology - Certificate

The combined MS in Oral Biology and Certificate in Oral and Maxillofacial Pathology is a post-doctoral training program. It qualifies dentists to

practice the specialty of Oral and Maxillofacial Pathology. The program is 36 months in length. A prerequisite for enrollment in the program is a DDS/DMD degree from a dental school in the United States or Canada that is accredited by the American Dental Association Commission on Dental Accreditation. However, individuals who are graduates of a dental school outside the United States or Canada may qualify for enrollment if appropriate certification that their dental training is the equivalent of a United States or Canadian degree can be obtained.

The program's major emphasis is surgical pathology (microscopic) diagnosis of biopsy specimens. Clinical management of patients with oral disease and radiographic interpretation of pathologic conditions of the head and neck are also emphasized. A research project and successful defense of a written thesis is required of each student as a part of the MS requirements. Completion of the certificate program qualifies the individual to challenge the American Board of Oral and Maxillofacial Pathology Examination. Successful completion of this examination is an absolute requirement for an individual to be able to provide microscopic diagnosis for surgical specimens in a pathology laboratory.

Students in this combined certificate/MS program may take up to 20 hours of 691 Research as a part of their combined program.

For more information about the certificate in Oral and Maxillofacial Pathology, visit <https://dentistry.tamhsc.edu/diagnostic/training/oral-pathology.html>.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|----------------------------------------------------------------------|-----------------------|
| OMFP 603 | Oral and Maxillofacial Pathology Seminar I | 2.0 |
| OMFP 604 | Oral and Maxillofacial Pathology Seminar II | 2.0 |
| OMFP 605 | Oral and Maxillofacial Pathology Seminar III | 2.0 |
| OMFP 606 | Oral and Maxillofacial Pathology Seminar IV | 2.0 |
| OMFP 607 | Oral and Maxillofacial Pathology Seminar V | 2.0 |
| OMFP 608 | Oral and Maxillofacial Pathology Seminar VI | 2.0 |
| OMFP 609 | Oral and Maxillofacial Pathology Seminar VII | 2.0 |
| OMFP 610 | Anatomic Pathology and Autopsy - Baylor University Medical Center I | 6.0 |
| OMFP 611 | Anatomic Pathology and Autopsy - Baylor University Medical Center II | 9.0 |
| OMFP 612 | Oral and Maxillofacial Pathology Service I | 0.0 |
| OMFP 613 | Oral and Maxillofacial Pathology Service II | 0.0 |

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| OMFP 614 | Oral and Maxillofacial Pathology Service III | 0.0 |
| OMFP 615 | Oral and Maxillofacial Pathology Service IV | 0.0 |
| OMFP 616 | Oral and Maxillofacial Pathology Service V | 0.0 |
| OMFP 617 | Oral and Maxillofacial Pathology Service VI | 0.0 |
| OMFP 618 | Oral and Maxillofacial Pathology Service VII | 0.0 |
| OMFP 619 | Advanced Oral Pathology | 2.0 |
| OMFP 691 | Research | 3.0 |
| PERI 609 | Clinical Stomatology I | 1.0 |
| PERI 610 | Clinical Stomatology II | 1.0 |
| PERI 611 | Clinical Stomatology III | 1.0 |
| PERI 612 | Clinical Stomatology IV | 0.0 |
| PERI 613 | Clinical Stomatology V | 1.0 |
| PERI 614 | Clinical Stomatology VI | 1.0 |
| PERI 615 | Advanced Clinical Stomatology I | 1.0 |
| Total Semester Credit Hours | | 40 |

Must complete 36 months of residency, total credit hours specified, any noncredit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

The MS in Oral Biology is required, for which students must complete an additional 32 semester credit hours, conduct a research project, and successfully defend a written thesis.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Oral and Maxillofacial Radiology - Certificate

The College of Dentistry offers a specialty certificate program in Oral and Maxillofacial Radiology. All applicants must hold a DDS, DMD, or equivalent foreign degree for admission. The certificate qualifies the graduate dentist for an independent specialty practice specializing in oral and maxillofacial radiology, as well as qualification to challenge the examination of the American Board of Oral and Maxillofacial Radiology for board certification (diplomate status). The mission of this certificate program is to graduate comprehensively trained dental specialists who will become proficient oral and maxillofacial radiologists, competent teachers who are familiar with foundational research training and study assessment, and strong contributors to the dental profession.

An optional MS in Oral Biology (<https://dentistry.tamhsc.edu/graduate-studies/futurestudents/mastersandphddegrees.html>) is available through the Department of Biomedical Sciences. Application is made through ApplyTexas (<https://www.applytexas.org>). The MS requires the successful completion of an additional 32 semester credit hours, the completion of a research project, and the successful defense of a written thesis. Additional time in residence would be required if pursuing the Certificate and the MS in Oral Biology simultaneously.

For more information about the Oral and Maxillofacial Radiology Certificate, please visit <http://dentistry.tamhsc.edu/diagnostic/training/oral-radiology.html>.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|-----------------------------------------------------------------------|-----------------------|
| OBIO 610 | Responsible Conduct in Biomedical Research | 1.0 |
| OBIO 611 | Research Design and Methodology | 2.0 |
| OBIO 621 | Applied Biostatistics | 2.0 |
| OBIO 631 | Advanced Craniofacial Development and Craniofacial Anomalies | 1.0 |
| OBIO 660 | Teaching Skills for Health Professions Educators | 1.0 |
| OBIO 672 | Head and Neck Anatomy | 1.5 |
| OMFP 619 | Advanced Oral Pathology | 2.0 |
| OMFR 600 | Radiation Physics and Biology for Radiology Residents I | 0.0 |
| OMFR 601 | Radiation Physics and Biology for Radiology Residents II | 0.0 |
| OMFR 604 | Case Conference I | 0.0 |
| OMFR 605 | Case Conference II | 0.0 |
| OMFR 606 | Case Conference III | 0.0 |
| OMFR 607 | Case Conference IV | 0.0 |
| OMFR 608 | Case Conference V | 0.0 |
| OMFR 609 | Advanced Radiology Interpretation in Oral and Maxillofacial Radiology | 2.0 |
| OMFR 610 | Advanced Imaging Technology in Oral and Maxillofacial Radiology | 1.0 |
| OMFR 611 | Advanced Oral and Maxillofacial Radiology | 1.0 |
| OMFR 612 | Clinical Teaching I | 0.0 |
| OMFR 613 | Clinical Teaching II | 0.0 |
| OMFR 614 | Clinical Teaching III | 0.0 |
| OMFR 615 | Clinical Teaching IV | 0.0 |
| OMFR 616 | Literature Review Journal Club I | 0.5 |
| OMFR 617 | Literature Review Journal Club II | 1.0 |
| OMFR 618 | Literature Review Journal Club III | 1.0 |
| OMFR 619 | Literature Review Journal Club IV | 1.0 |
| OMFR 620 | Literature Review Journal Club V | 1.0 |
| OMFR 621 | Literature Review Journal Club VI | 1.0 |
| OMFR 622 | Clinical Oral and Maxillofacial Radiology Service I | 2.0 |
| OMFR 623 | Clinical Oral and Maxillofacial Radiology Service II | 2.0 |
| OMFR 624 | Clinical Oral and Maxillofacial Radiology Service III | 2.0 |
| OMFR 625 | Clinical Oral and Maxillofacial Radiology Service IV | 3.0 |
| OMFR 626 | Clinical Oral and Maxillofacial Radiology Service V | 3.5 |

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| OMFR 627 | Clinical Oral and Maxillofacial Radiology Service VI | 4.0 |
| OMFR 628 | Medical Clinical Radiology Service I | 1.0 |
| OMFR 629 | Medical Clinical Radiology Service II | 3.5 |
| OMFR 630 | Medical Clinical Radiology Service III | 4.0 |
| OMFS 625 | Physical Diagnosis and Internal Medicine | 1.0 |
| ORTH 613 | Advanced Cephalometrics | 1.0 |
| ORTH 644 | Introduction to Cephalometrics (Advanced Cephalometrics) | 1.0 |
| Total Semester Credit Hours | | 48 |

Must complete 24 months of residency, total credit hours specified, any non-credit courses specified, and be approved by the Promotions Committee for this certificate to be awarded. In addition to didactic and seminar courses, the student will participate in the Oral and Maxillofacial Radiology clinical service at the College of Dentistry, as well as the Medical Radiology Clinical Service at Baylor University Medical Center at Dallas.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Department of Endodontics

<http://dentistry.tamhsc.edu/endodontics>

The Department of Endodontics at the College of Dentistry provides education to develop competent diagnosticians and clinicians in the field of dentistry that focuses on the diagnosis, treatment and prevention of diseases involving dental pulp and the tissues at the root apex.

The endodontic faculty teach a full scope of clinical and didactic endodontic courses to second-, third-, and fourth-year dental students.

An optional MS in Oral Biology (<https://dentistry.tamhsc.edu/graduate-studies/futurestudents/mastersandphddegrees.html>) is available through the Department of Biomedical Sciences. Application is made through ApplyTexas (<https://www.applytexas.org>). The MS requires the successful completion of an additional 32 semester credit hours, the completion of a research project, and the successful defense of a written thesis. Additional time in residence would be required if pursuing the Certificate and the MS in Oral Biology simultaneously.

The students in the graduate certificate program treat complex cases beyond the scope of DDS expertise, with cases being referred from within the College of Dentistry and from regional dentists. The students also provide treatment to medically-compromised patients onsite and in hospital settings.

The department has generated numerous research publications during the past decade in the field of endodontic surgery and materials.

Faculty

Augsburger, Robert A, Clinical Assistant Professor
Endodontics
DDS, University of California-San Francisco, 1973

Cheff, Stephen O, Clinical Assistant Professor
Endodontics
DDS, University of Michigan-Ann Arbor, 1972

Glickman, Gerald N, Professor
Endodontics
DDS, The Ohio State University Columbus, OH, 1978

Jalali, Sid P, Clinical Assistant Professor
Endodontics
PHD, Kerman University of Medical Sciences/Iran, 2008

Ouyang, Hongjiao, Associate Professor
Endodontics
DMD, University of Pittsburgh, 2008
PHD, University of Michigan, 2000

Schweitzer, Jordan L, Clinical Associate Professor
Endodontics
DDS, Baylor College of Dentistry, 1986

Wang, Fengming, Clinical Assistant Professor
Endodontics
PHD, West China College of Stomatology, 2006

Willey, William L, Adjunct Assistant Professor
Endodontics
DDS, Georgetown University, 1976

Certificates

- Endodontics Certificate

Endodontics - Certificate

The certificate program in Endodontics (<http://dentistry.tamhsc.edu/endodontics>) is a 27-month graduate program, fully accredited by the American Dental Association Commission on Dental Accreditation, designed to be a comprehensive, didactic, clinical and research experience into all aspects of endodontics.

Application requirements include a DDS, DMD, or an equivalent foreign dental degree, letters of recommendation, a letter of motivation, a resume, a competitive class ranking, and passage of the National Board Dental Examinations or Graduate Record Examination (GRE) if a graduate of a foreign dental school. Application is made through the Postdoctoral Application Support Service (PASS). The deadline to apply is August 1 of each year, with a start date of the following June.

The program provides the graduate student with the tools necessary to be a clinically proficient endodontist, an astute diagnostician, a critical thinker, and a sound "endodontist-scientist." In addition, the program prepares the student for the American Board of Endodontics certification examination.

An optional MS in Oral Biology (<https://dentistry.tamhsc.edu/graduate-studies/futurestudents/mastersandphddegrees.html>) is available through the Department of Biomedical Sciences. Application is made through ApplyTexas (<https://www.applytexas.org>). The MS requires the successful completion of an additional 32 semester credit hours, the completion of a research project, and the successful defense of a written thesis. Additional time in residence would be required if pursuing the Certificate and the MS in Oral Biology simultaneously.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|--------------------------------------------------|-----------------------|
| AEGD 604 | Practice Management I | 1.5 |
| ENDO 600 | Current Literature Review I | 1.0 |
| ENDO 601 | Current Literature Review II | 1.0 |
| ENDO 602 | Current Literature Review III | 1.0 |
| ENDO 603 | Current Literature Review IV | 1.0 |
| ENDO 604 | Current Literature Review V | 1.0 |
| ENDO 605 | Current Literature Review VI | 1.0 |
| ENDO 606 | Current Literature Review VII | 1.0 |
| ENDO 607 | Endodontics Treatment Planning Conference I | 1.0 |
| ENDO 608 | Endodontics Treatment Planning Conference II | 1.0 |
| ENDO 609 | Endodontics Treatment Planning Conference III | 1.0 |
| ENDO 610 | Endodontics Treatment Planning Conference IV | 1.0 |
| ENDO 611 | Endodontics Treatment Planning Conference V | 1.0 |
| ENDO 612 | Endodontics Treatment Planning Conference VI | 1.0 |
| ENDO 613 | Endodontics Treatment Planning Conference VII | 1.0 |
| ENDO 614 | Special Problems in Endodontics I | 1.0 |
| ENDO 615 | Special Problems in Endodontics II | 1.0 |
| ENDO 616 | Special Problems in Endodontics III | 1.0 |
| ENDO 617 | Special Problems in Endodontics IV | 1.0 |
| ENDO 618 | Special Problems in Endodontics V | 1.0 |
| ENDO 619 | Advanced Special Problems in Endodontics I | 1.0 |
| ENDO 620 | Advanced Special Problems in Endodontics II | 1.0 |
| ENDO 622 | Clinical Endodontics I | 2.0 |
| ENDO 623 | Clinical Endodontics II | 2.0 |
| ENDO 624 | Clinical Endodontics III | 2.0 |
| ENDO 625 | Clinical Endodontics IV | 2.0 |
| ENDO 626 | Clinical Endodontics V | 2.0 |
| ENDO 627 | Advanced Clinical Endodontics I | 2.0 |
| ENDO 628 | Advanced Clinical Endodontics II | 2.0 |
| ENDO 691 | Research | 4.0 |
| OBIO 611 | Research Design and Methodology | 2.0 |
| OBIO 621 | Applied Biostatistics | 2.0 |
| OBIO 651 | Sensory Neurobiology and Pain | 1.0 |
| OBIO 660 | Teaching Skills for Health Professions Educators | 1.0 |
| OBIO 670 | Clinical Pharmacology | 1.5 |

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| OBIO 671 | Applied Medical Physiology | 2.0 |
| OBIO 672 | Head and Neck Anatomy | 1.5 |
| OBIO 673 | Oral Microbiology | 2.0 |
| OBIO 674 | Immunology | 1.0 |
| OMFP 619 | Advanced Oral Pathology | 2.0 |
| OMFR 611 | Advanced Oral and Maxillofacial Radiology | 1.0 |
| OMFS 610 | Conscious Sedation | 1.0 |
| OMFS 625 | Physical Diagnosis and Internal Medicine | 1.0 |
| PERI 650 | Dental Implants | 1.5 |
| Total Semester Credit Hours | | 61 |

Must complete 27 months of residency, total credit hours specified, any noncredit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Department of Oral and Maxillofacial Surgery

The Department of Oral and Maxillofacial Surgery (<http://dentistry.tamhsc.edu/oral-surgery>) (OMFS) provides a broad educational basis for our predoctoral and residency programs, as well as serving the community through our Professional Services Division.

The interaction with a renowned medical center enhances our students' surgical and medical experiences. Our students' educational experiences are also enhanced by the presence of the Center for Maxillofacial Prosthodontics (<http://dentistry.tamhsc.edu/oral-surgery/cmp>) within the OMFS Department.

The OMFS Department is staffed by seven full-time faculty, twelve part-time clinical faculty, sixteen OMFS students, and supported by the assistance of twenty-two clinical and clerical staff.

The Postgraduate (Residency) division conducts one of the most highly prized and sought after OMFS Residency programs in the country, attracting the brightest and most-talented applicants each year from the graduating dental school classes and even from some medical professions.

There are two levels of training currently offered: 1) a 6-year combined MD/Certificate program in conjunction with Texas Tech University School of Medicine; and 2) a 4-year Certificate-only program.

All applicants must be currently enrolled in an American Dental Association (ADA)-accredited US or Canadian dental school, or hold a DDS or DMD degree from an ADA-accredited US or Canadian dental school. Dentists with degrees from foreign countries are not eligible for the combined 6-year MD/OMFS Certification Program. Applicants with dental degrees from foreign dental schools are eligible for the 4-year Certificate program on a case-by-case basis.

Due to the highly competitive nature of the College of Dentistry OMFS application process, all applicants should ideally be in the top 15% of their dental school class, have a high GPA, and have letters that attest to demonstrated interest and potential in the field of oral and maxillofacial surgery.

Interviews are by invitation. If invited, all applicants are expected to interview in person to be considered for program admission. All interviews are held on one day, usually in early December, and substantial notice is given of the date. Interviewees should plan on arriving the night prior to the interview because they begin very early in the morning. Interviews often run through late afternoon, depending on how many applicants have accepted our invitation to interview.

Applications are submitted via the Postdoctoral Application Support Service (<http://www.adea.org/PASSapp>) (PASS) and the deadline is October 1 of each year for a start the following summer.

Faculty

Bell, Colin S, Adjunct Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1979

Bender, Steven D, Clinical Assistant Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1986

Craig, Mark A, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
MD, Texas A&M University Baylor College of Dentistry, 1993
DDS, Texas A&M Baylor College of Dentistry, 1990

Ellis, Michael L, Clinical Associate Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1985

Gonzalez Carranza, Marianela, Clinical Assistant Professor
Oral & Maxillofacial Surgery
DDS, Universidad Central de Venezuela, 1991

Gonzalez, Jorge A, Clinical Assistant Professor
Oral & Maxillofacial Surgery
DDS, University of Costa Rica, 1997

Grogan, David M, Clinical Associate Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1981

Henderson II, Bryan N, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1987

Kindrick, Roy D, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1967

Nelson, Garrett S, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, University Of California-Los Angeles, 1999

Pavelka Jr, Miro A, Adjunct Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1977

Phillips, David M, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, The University of Texas Health Science Center at Houston, 1977

Read-Fuller, Andrew M, Clinical Assistant Professor
Oral & Maxillofacial Surgery
MD, UT Southwestern Medical School, 2014
DDS, UCLA, 2011

Reddy, Likith V, Clinical Professor
Oral & Maxillofacial Surgery
MD, University of Texas Southwestern Medical Center, 2000
DDS, Case Western Reserve University, 1995

Taylor IV, Thad, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, Howard University, 1994

Triplett, Robert G, Clinical Professor
Oral & Maxillofacial Surgery
DDS, Loyola University, 1963

Verma, Suzanne N, Instructional Assistant Professor
Oral & Maxillofacial Surgery
MMS, University of Illinois at Chicago, 2001

Williams, Craig E, Adjunct Associate Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1972

Certificates

- Oral and Maxillofacial Surgery Certificate

Oral and Maxillofacial Surgery - Certificate

For more information about the Certificate in Oral & Maxillofacial Surgery, visit <https://dentistry.tamhsc.edu/oral-surgery/residency.html>.

Application requirements include a DDS or DMD degree, passing National Board Dental Examination scores for graduates of American Dental Association Commission on Dental Accreditation accredited institutions, a competitive academic record, National Board of Medical Examiners Basic Science Examination scores, and references. Applications are submitted via the Postdoctoral Application Support Service (PASS). The deadline to apply is October 1 of each year, with a start the following summer.

There are two routes available for earning a Certificate in Oral and Maxillofacial Surgery (<http://dentistry.tamhsc.edu/oral-surgery/residency.html>) at the College of Dentistry; a six-year program (combined MD and Certificate) or a four-year program (Certificate only). Both routes require the completion of a four-year undergraduate degree and a DDS/DMD from an American Dental Association Commission on Dental Accreditation accredited college of dentistry. All applicants must apply through the PASS application process. In the six-year, dual-degree program, the student is granted advanced standing in medical school and completes the MD degree in three calendar years. Elective clerkships during the fourth year of medical school education are used to satisfy the mandated five-months of general anesthesia training. Following the completion of medical school, the candidate then serves a one-year internship in General Surgery at Baylor University Medical Center in Dallas, Texas. Following the completion of Post-graduate Year 1 (PGY-1), the student returns to the College of Dentistry for the remaining 30 months of the program.

In the four-year curriculum, the student will spend the first 14 months off-service participating on various services at Baylor University Medical Center, i.e., Internal Medicine, General Surgery, and Anesthesia. The student will then return to our service for the remaining 34 months of training. During their time on service, they will also rotate on the services of Head and Neck Oncology and Oculoplastic Surgery.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------|-------------------------------------------------------|-----------------------|
| OMFS 650 | Oral and Maxillofacial Surgery Rotations ¹ | 1 |
| Total Semester Credit Hours | | 12 |

¹ Repeatable course to be taken for a total of 12hrs

Certificate only: Complete 48 months of residency, 12 credit hours, and be approved by the Promotions Committee.

Certificate and MD: Complete 24 months of residency, 6 credit hours, and be approved by the Promotions Committee.

Certificate and PhD: Complete 48 months of residency, 6 credit hours of OMFS 650, and be approved by the Promotions Committee.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Department of Orthodontics

Our Mission

The mission of the Texas A&M College of Dentistry Department of Orthodontics (<http://dentistry.tamhsc.edu/orthodontics>) advanced education program is to graduate highly proficient, critical thinking, master's degree level orthodontic specialists who can effectively serve the public in both community-based practice and an academic environment and are prepared to become life-long learners and leaders within the profession.

Our Objective

To provide the student with a well-balanced educational experience, integrating a strong foundation in the basic sciences and research with a diverse clinical experience.

To graduate a specialist with the highly refined analytical, clinical, and management skills necessary to provide optimum orthodontic care for the public.

Our Philosophy

The philosophy of the Graduate Orthodontic Program at the College of Dentistry is to prepare students for clinical practice in the specialty of orthodontics. Since this program requires scientific research, culminating in an MS in Oral Biology, our graduates develop critical thinking skills, while making significant contributions to the art and science of the specialty of orthodontics. Our goal is to impart in-depth knowledge

of the biological and mechanical principles governing the practice of orthodontics and to allow students to develop excellent proficiency in orthodontics while treating a wide variety of malocclusions using multiple techniques. This expertise will be accomplished utilizing a variety of philosophies of diagnosis and treatment from a diverse faculty of approximately 25 outstanding practitioners and educators.

Faculty

Adams, Terry B, Adjunct Assistant Professor
Orthodontics
DDS, DDS, 1973 U Missouri, 1973

Brock II, Ralph A, Adjunct Assistant Professor
Orthodontics
DDS, Meharry Medical College, 2000

Buschang, Peter H, Professor
Orthodontics
PHD, University of Texas Austin, 1980

Cai, Zhuo, Adjunct Assistant Professor
Orthodontics
PHD, Ohio State University, 1996
DDS, Beijing Medical University, 1987

Carrillo, Roberto, Adjunct Assistant Professor
Orthodontics
DDS, Universidad Autonoma de Nuevo Leon, 2002

Ceen, Richard F, Adjunct Professor
Orthodontics
DDS, University of Tennessee Health Science Center, 1966

Cohen, Glenn T, Adjunct Assistant Professor
Orthodontics
DMD, University of Florida, 2007

Collins, Monte K, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1984

Cope, Jason B, Adjunct Assistant Professor
Orthodontics
PHD, Texas A&M University Baylor College of Dentistry, 1999

Frech, Devek K, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1986

Geller, Mark S, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1973

Genecov, Jeffrey S, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1985

Glenn, Gayle, Adjunct Assistant Professor
Orthodontics
MSD, Baylor College of Dentistry, 1984

Jacob, Helder, Adjunct Assistant Professor
Orthodontics
PHD, São Paulo State University, Brazil, 2011
DDS, São Paulo State University, Brazil, 1994

Jing, Yan, Research Assistant Professor
Orthodontics
PHD, Sichuan University, 2014

Jolley, Cameron, Adjunct Assistant Professor
Orthodontics
DMD, Nova Southeastern University, 2006

Julien, Katie C, Clinical Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1992

Myser, Scott A, Adjunct Assistant Professor
Orthodontics
DDS, Texas A&M University Baylor College of Dentistry, 2008

Park, Yong Jong, Adjunct Assistant Professor
Orthodontics
DDS, Seoul Natl Uni Seoul Korea, 2000

Polson, James R, Adjunct Assistant Professor
Orthodontics
DDS, The University of Texas Health Science Center at San Antonio, 1986

Stephens Jr, Claude R, Adjunct Assistant Professor
Orthodontics
DDS, Texas A&M University, 1981

Stephens Jr, Marvin G, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1971

Tadlock, Larry P, Clinical Associate Professor
Orthodontics
DDS, Baylor College of Dentistry, 1984

Taylor, Reginald W, Associate Professor
Orthodontics
DMD, Harvard School of Dental Medicine, 1992

Tipton, Nadene J, Adjunct Assistant Professor
Orthodontics
DDS, Texas A&M University Baylor College of Dentistry, 1992

Valant, John R, Adjunct Assistant Professor
Orthodontics
DDS, Loyola University, Chicago, 1979

Certificates

- Orthodontics Certificate (p. 548)

Orthodontics - Certificate

The Certificate in Orthodontics (<http://dentistry.tamhsc.edu/orthodontics>) is a most-significant document for graduates in the dental specialty of Orthodontics. Although all graduates from the 34.5-month regimen of study complete a publishable MS thesis in the Department of Orthodontics at the College of Dentistry and receive an MS in Oral Biology, the specialty of Orthodontics is not annotated

on the diploma. Therefore, the Certificate in Orthodontics portrays certification in the discipline/specialty as a legitimate credential to potential orthodontic patients, as well as to hospitals, future employers, professional organizations, and certifying agencies such as the American Board of Orthodontics. As such, the Certificate in Orthodontics should be weighted equally as important as the MS degree in Oral Biology, since it is more explanatory to the consuming public and regulatory authorities.

Application requirements include a DDS or DMD, National Board Dental Examinations for graduates of American Dental Association Council on Dental Accreditation accredited institutions, Graduate Record Examination scores, a competitive academic record, and references. Applications are made through PASS. The deadline to apply is August 15 of each year, with a start date the following summer.

Students in this combined certificate/MS program may take up to 20 hours of 691 Research as a part of their combined program.

For more information about the Certificate in Orthodontics visit <http://dentistry.tamhsc.edu/orthodontics/index.html>.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|-------------------------------------|-----------------------|
| ORTH 601 | TMD Clinic I | 0.0 |
| ORTH 602 | TMD Clinic II | 0.0 |
| ORTH 603 | TMD Clinic III | 0.0 |
| ORTH 604 | TMD Clinic IV | 0.0 |
| ORTH 605 | TMD Clinic V | 0.0 |
| ORTH 656 | TMD Clinic VI | 0.0 |
| ORTH 657 | TMD Clinic VII | 0.0 |
| ORTH 658 | TMD Clinic VIII | 0.0 |
| ORTH 659 | TMD Clinic IX | 0.0 |
| ORTH 606 | Craniofacial Anomalies Clinic I | 0.0 |
| ORTH 607 | Craniofacial Anomalies Clinic II | 0.0 |
| ORTH 608 | Craniofacial Anomalies Clinic III | 0.0 |
| ORTH 609 | Craniofacial Anomalies Clinic IV | 0.0 |
| ORTH 611 | Biomechanics II | 1.0 |
| ORTH 612 | Material Science in Orthodontics | 1.0 |
| ORTH 614 | Orthognathic Surgery Conference I | 0.0 |
| ORTH 615 | Orthognathic Surgery Conference II | 0.0 |
| ORTH 616 | Orthognathic Surgery Conference III | 0.0 |
| ORTH 617 | Orthognathic Surgery Conference IV | 0.0 |
| ORTH 618 | Orthognathic Surgery Conference V | 0.0 |
| ORTH 619 | Orthognathic Surgery Conference VI | 0.0 |
| ORTH 620 | Orthognathic Surgery Seminar | 0.5 |
| ORTH 622 | Clinical Specialty Seminars II | 2.0 |
| ORTH 623 | Clinical Specialty Seminars III | 1.0 |
| ORTH 624 | Clinical Specialty Seminars IV | 2.0 |
| ORTH 625 | Clinical Specialty Seminars V | 2.0 |
| ORTH 626 | Clinical Specialty Seminars VI | 1.5 |

| | | |
|-----------------------------|-------------------------------------------------|------|
| ORTH 627 | Clinical Specialty Seminars VII | 2.0 |
| ORTH 628 | Clinical Specialty Seminars VIII | 2.0 |
| ORTH 629 | Clinical Specialty Seminars IX | 2.0 |
| ORTH 630 | Advanced Orthodontic Practice Management I | 2.0 |
| ORTH 631 | Advanced Orthodontic Practice Management II | 2.0 |
| ORTH 634 | Independent Research I | 2.0 |
| ORTH 639 | Independent Research-Manuscript Development III | 2.0 |
| ORTH 647 | Clinical Orthodontics I | 1.0 |
| ORTH 648 | Clinical Orthodontics II | 3.0 |
| ORTH 649 | Clinical Orthodontics III | 3.0 |
| ORTH 650 | Clinical Orthodontics IV | 2.0 |
| ORTH 651 | Clinical Orthodontics V | 3.0 |
| ORTH 652 | Clinical Orthodontics VI | 3.0 |
| ORTH 653 | Clinical Orthodontics VII | 2.0 |
| ORTH 654 | Clinical Orthodontics VIII | 2.5 |
| ORTH 655 | Clinical Orthodontics IX | 3.0 |
| Total Semester Credit Hours | | 47.5 |

Must complete 34.5 months of residency, total credit hours specified, any noncredit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

The MS in Oral Biology (p. 528) is also required, for which students must complete an additional 32 semester credit hours, conduct a research project, and successfully defend a written thesis. The coursework for the Certificate and the MS are completed simultaneously.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Department of Pediatric Dentistry

The Department of Pediatric Dentistry at the College of Dentistry provides didactic and clinical instruction on preventive and therapeutic oral health care for infants and children. This instruction is provided for dental hygiene, dental, and graduate students in the pediatric dentistry specialty program.

Undergraduate Teaching

Full- and part-time faculty are involved in the didactic training of the dental hygiene students, and the second-, third-, and fourth-year dental students. This is accomplished using a small group format. In addition, they are responsible for clinical instruction of dental and dental hygiene students on campus and off-campus at outside community clinics.

Pediatric Dentistry Department Affiliations

The Department has affiliations with other institutions that offer experiences outside the College of Dentistry, including:

- Children's Medical Center of Dallas,
- Texas Scottish Rite Hospital for Children,
- Agape,
- North Dallas Shared Ministries,

- Urban Intertribal Council, and
- Healing Hands Ministry.

Faculty

Alvarez, Martha H, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Instituto de Ciencias de la Salud (CES), Medellin, Colombia, 1997

Borovoy Hofman, Nilly, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Universidad Tecnologica de Mexico, 2006

Burch, Dan, Clinical Assistant Professor
Pediatric Dentistry
DDS, University of Tennessee Health Science Center Memphis, 2013

Deck, Jennifer P, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2009

Ettelbrick, Kelli L, Adjunct Assistant Professor
Pediatric Dentistry
DDS, University of Iowa, 1996

Hale, Cassie D, Clinical Assistant Professor
Pediatric Dentistry
DDS, University of Colorado, 2016

Harris, Joseph A, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Baylor College of Dentistry, 1972

Hill, Sharon D, Adjunct Assistant Professor
Pediatric Dentistry
DDS, University of North Carolina, 1986

Hinze, Erin S, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2008

Kainthla, Priyanka, Adjunct Assistant Professor
Pediatric Dentistry
DDS, University of Oklahoma, 2014

Kerins, Carolyn A, Associate Professor
Pediatric Dentistry
PHD, Baylor College of Dentistry, 2004
DDS, Baylor College of Dentistry, 2002

King, Silvia R, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Catholic University of Minas Gerais-Brazil, 1981

Kogut, Mark H, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Baylor College of Dentistry, 1977

Layton, James S, Clinical Assistant Professor
Pediatric Dentistry
DDS, Baylor College of Dentistry, 1977

Lin, Ko-Yu W, Clinical Assistant Professor
Pediatric Dentistry
DDS, Kaohsiung Medical College, Taiwan, 1985

Marr, Karina W, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2005

McGuire, Susan S, Clinical Assistant Professor
Pediatric Dentistry
DDS, Louisiana State University Health Sciences Center at New Orleans, 1986

McWhorter, Alton G, Clinical Professor
Pediatric Dentistry
DDS, University of Tennessee Medical Units, 1979

Pace, Kathleen A, Clinical Assistant Professor
Pediatric Dentistry
DDS, State University of New York, Buffalo School of Dentistry, 1977

Patel, Rupande, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 1991

Plunk, Michael D, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Baylor College of Dentistry, 1974

Reddy, Anil K, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Columbia University, 1994

Seo, Anna H, Adjunct Assistant Professor
Pediatric Dentistry
DDS, University of Michigan - Ann Arbor, 1991

Shiralkar, Reena Kuba, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2004

Tanur, Monique, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Universidad Tecnológica de Mexico, 1989

Williamson, Robert, Adjunct Assistant Professor
Pediatric Dentistry
DDS, The University of Texas Health Science Center at San Antonio, 2005

Wong, Lolo, Clinical Assistant Professor
Pediatric Dentistry
DDS, Creighton University, 1990

Certificates

- Pediatric Dentistry Certificate

Pediatric Dentistry - Certificate

The Certificate in Pediatric Dentistry is offered by the Texas A&M University College of Dentistry, located in Dallas, Texas. It is a 24-month program beginning in mid- to late June each year. Up to 11 new positions are available each year. All applicants must have a DDS or DMD degree or equivalent. Strong preference is given to applicants who have graduated from a CODA-accredited US or Canadian dental school. All applicants must have a Postdoctoral Dental Matching Program (MATCH) number and all applications must be made through the Postdoctoral Application Support Service (PASS) portal. Applicants must submit official transcripts from all colleges and universities attended, and

passing scores on the National Board Dental Examinations and the Advanced Dental Admission Test. The deadline to apply is October 1 of each year.

The program in Pediatric Dentistry is designed to offer the graduate student a curriculum that is balanced in didactic and clinical areas. The primary goal of the program is to develop a biologically oriented, technically capable, and socially sensitive pediatric dentist who is capable of providing comprehensive care to all pediatric patients. Emphasis is placed on hospital dentistry, special needs patient care, sedation, and interceptive orthodontics. Clinical training is provided in two hospitals and one university-based clinic.

Clinical instruction includes training in advanced diagnosis and treatment planning, treatment of traumatic injuries, pharmacological and non-pharmacological behavior management, and interceptive orthodontics. Hospital and operating room protocol, oral rehabilitation, and prevention are included in the clinical component. Clinical rotations include assignments to the dental clinics at Children's Medical Center, Texas Scottish Rite Hospital for Children, and the College of Dentistry. In addition, there are other hospital clinical rotations such as anesthesia, craniofacial team, emergency on-call, and pediatric medicine.

Didactic training is College of Dentistry-based, with support from hospital and special care facility personnel. Didactic instruction consists of core curriculum courses and seminars in pediatric dentistry. The majority of core courses are assigned during the first year to provide a solid base for the pediatric specialty course and allow more time for clinical experience in the second year. All aspects of the specialty of pediatric dentistry are included in the didactic instruction. The didactic courses comprise approximately 20% of the program.

Teaching responsibilities, including technique classes and clinical instruction, are required by the program. A research project suitable for publication is required for the certificate. Upon successful completion of all components of the program, the student receives a Certificate in Pediatric Dentistry and meets the advanced education eligibility requirements of the American Board of Pediatric Dentistry. It is required that each student take the American Board of Pediatric Dentistry qualifying examination prior to graduation from the program.

For additional information about the Certificate in Pediatric Dentistry, visit <http://dentistry.tamhsc.edu/pediatric-dentistry/residency.html>.

An optional, 32 credit hour MS in Oral Biology or a 42 hour online MPH may be attempted during the pediatric dentistry certificate program. In lieu of an MPH, a student may elect to pursue an online Certificate in Public Health. These degrees are not fully integrated with the certificate program. It is anticipated that candidates pursuing both a certificate in Pediatric Dentistry and an advanced degree will require additional time in residency to achieve the advanced degree. Additional tuition will be incurred. Contact the program for additional information on these options.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|--------------------------------------------------------------|-----------------------|
| OBIO 611 | Research Design and Methodology | 2.0 |
| OBIO 621 | Applied Biostatistics | 2.0 |
| OBIO 630 | Growth and Mechanisms of Development | 0.5 |
| OBIO 631 | Advanced Craniofacial Development and Craniofacial Anomalies | 1.0 |
| OBIO 632 | Physical Growth and Maturation | 1.0 |
| OBIO 660 | Teaching Skills for Health Professions Educators | 1.0 |
| OMFR 611 | Advanced Oral and Maxillofacial Radiology | 1.0 |
| PEDD 611 | Pediatric Dentistry I | 3.0 |
| PEDD 612 | Pediatric Dentistry II | 3.0 |
| PEDD 613 | Pediatric Dentistry III | 3.0 |
| PEDD 614 | Pediatric Dentistry IV | 2.5 |
| PEDD 615 | Pediatric Dentistry V | 5.0 |
| PEDD 616 | Pediatric Dentistry VI | 4.0 |
| PEDD 621 | Hospital Dentistry I | 2.0 |
| PEDD 622 | Hospital Dentistry II | 2.5 |
| PEDD 623 | Hospital Dentistry III | 3.0 |
| PEDD 624 | Hospital Dentistry IV | 3.5 |
| PEDD 625 | Hospital Dentistry V | 4.0 |
| PEDD 626 | Hospital Dentistry VI | 4.0 |
| Total Semester Credit Hours | | 48 |

To receive a certificate in Pediatric Dentistry, students must remain continuously enrolled for 24 months, and successfully complete the semester credit hours as indicated on their degree plan, and an approved research project. There is no advanced standing granted for previous clinical specialty training or advanced degrees.

The MS in Oral Biology (p. 528) and the Master of Public Health (MPH) (p. 1218) programs are optional.

Students in the Certificate, MS or MPH program must remain continuously enrolled and be enrolled the semester in which the degree is to be awarded.

Please see the catalog pages for the MS in Oral Biology (p. 528) and Master of Public Health (MPH) (p. 1218) programs for more information regarding application and curriculum for these programs.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses

Department of Periodontics

The Department of Periodontics at the College of Dentistry provides instruction in the prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of the teeth to first professional DDS, dental hygiene, and graduate students.

Departmental faculty assigned to first professional teaching provide students with the knowledge and clinical skills to diagnose and treat patients with periodontal disease. This is accomplished through didactic

and pre-clinical instruction, followed by clinical treatment of a diverse patient population with gingivitis and chronic periodontitis.

Advanced Training

The Advanced Training Program in Periodontics was started in 1955 and accounts for many specialty leaders among alumni. Graduate students who successfully complete the three-year curriculum and defend MS research, are awarded a Certificate in Periodontics and an MS in Oral Biology.

Department Centers

The Department of Periodontics is unique. In addition to providing undergraduate and graduate training in Periodontics, the department includes the Stomatology Center (a Salivary Dysfunction Clinic and Laboratory). The Center provides a world-class opportunity for the study and management of a diverse group of stomatological disorders, facilitating a holistic approach and better understanding of oral-systemic interactions. This has proven to be a fertile environment for clinical research and has attracted visiting clinicians pursuing knowledge and experience in these areas.

Department Affiliations

The department is affiliated with Baylor University Medical Center and includes a rotation for Dermatology residents at the Stomatology Center. Departmental faculty engage in funded research programs, primarily in areas of salivary dysfunction, stomatology, periodontics, and dental implants.

Faculty

Abraham, Celeste M, Clinical Associate Professor
Periodontics
DDS, Howard University, 1988

Cho, Jun Y, Clinical Associate Professor
Periodontics
DDS, Seoul National University, Korea, 1961

Crump, Thomas B, Adjunct Assistant Professor
Periodontics
DDS, Texas A&M University Baylor College of Dentistry, 1997

Diekwisch, Thomas G, Professor and Head, Director
Periodontics
DMD, Philipps-University of Marburg, West Germany, 1986

Ezzo, Paul J, Adjunct Assistant Professor
Periodontics
PHD, Texas A&M University Baylor College of Dentistry, 2000
DDS, Baylor College of Dentistry, 1983

Fallah Abed, Pooria, Clinical Assistant Professor
Periodontics
DDS, School of Dentistry Qazvin, 2009

Gopinath, Gokul, Research Assistant Professor
Periodontics
PHD, Manipal University, India, 2010

Griffiths, Garth R, Clinical Assistant Professor, Director
Periodontics
DDS, The University of Texas Health Science Center at San Antonio, 1992

Harrel, Stephen K, Adjunct Professor
Periodontics
DDS, Baylor University College of Dentistry, 1972

Hegde, Rashmi, Adjunct Assistant Professor
Periodontics
DDS, Bangalore University, India, 1999

Kapoor, Rishika, Adjunct Assistant Professor
Periodontics
DDS, Texas A&M University, 2014

Parra Carrasquer, Carlos, Clinical Assistant Professor
Periodontics
DDS, Universitat Internacional de Catalunya, 2009

Plemons, Jacqueline M, Clinical Professor
Periodontics
DDS, Baylor University College of Dentistry, 1986

Pylant III, George D, Adjunct Assistant Professor
Periodontics
DDS, Baylor College of Dentistry, 1988

Regan, Deborah M, Clinical Assistant Professor
Periodontics
DDS, University of Dublin Trinity College, 1982

Rossmann, Jeffrey A, Clinical Professor
Periodontics
DDS, University of Minnesota - Twin Cities, 1972

Stenberg, William V, Clinical Assistant Professor
Periodontics
DDS, Northeastern State University of Oklahoma, 2012

Tunnell, John C, Adjunct Assistant Professor
Periodontics
DDS, Baylor College of Dentistry, 2016

Wolinsky, Lawrence E, Professor
Periodontics
DMD, Tufts University, 1980

Certificates

- Periodontics Certificate

Periodontics - Certificate

This is a post-doctoral program for the specialty of dentistry in Periodontics. Only Postdoctoral Application Support Service (PASS/MATCH) applications, received for year of anticipated enrollment, are reviewed. For additional information about the Certificate in Periodontics visit <http://dentistry.tamhsc.edu/periodontics/graduateprograms.html>.

All US applicants **must have completed at least three years of education at a United States dental school** that has been accredited by the American Dental Association Commission on Dental Accreditation (CODA). All US applicants must pass Part I of the National Dental Board Examinations and submit their score with their application. Official dental school transcripts and an official letter from the Dean of their dental school, stating class rank at the time of the application, must be sent directly to the College of Dentistry. The Graduate Record Examination (GRE) must have been taken less than five years prior to the PASS/

MATCH application deadline. All US applicants must submit current Basic Life Support certification from the American Heart Association. All US applicants must hold a DDS or DMD degree from a US dental school (CODA accredited) prior to enrollment. All US applicants must pass Part II of the National Board Dental Examinations and have their score sent to the College of Dentistry prior to enrollment. Any US applicant that holds a DDS or DMD must submit all of the above at the time of application through the PASS/MATCH system.

All international applicants must have completed dental school, hold the equivalent of a DDS or DMD, and submit official dental school transcripts. These transcripts must be evaluated by Education Credential Evaluators and have the evaluation of grades/degree sent directly to the College of Dentistry. All international applicants must submit GRE scores that are less than five years old prior to the PASS/MATCH application deadline. Any applicant that is a citizen of a country where English is not the native language must also submit English-language testing scores that are less than one year old. All international candidates must submit current Basic Life Support certification from the American Heart Association.

Only the most qualified candidates will be invited for an interview. A committee of Periodontal faculty at the College of Dentistry selects future students from the interviewed candidates. The program provides three years of Advanced Education in Periodontics, meeting all CODA standards.

Students in this combined certificate/MS program may take up to 20 hours of 691 Research as a part of their combined program.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|------------------------------------|-----------------------|
| PERI 600 | Clinical Periodontics I | 0.0 |
| PERI 601 | Clinical Periodontics II | 0.0 |
| PERI 602 | Clinical Periodontics III | 0.0 |
| PERI 603 | Advanced Clinical Periodontics I | 0.0 |
| PERI 604 | Advanced Clinical Periodontics II | 0.0 |
| PERI 605 | Advanced Clinical Periodontics III | 0.0 |
| PERI 606 | Advanced Clinical Periodontics IV | 0.0 |
| PERI 607 | Advanced Clinical Periodontics V | 0.0 |
| PERI 608 | Advanced Clinical Periodontics VI | 0.0 |
| PERI 609 | Clinical Stomatology I | 0.0 |
| PERI 610 | Clinical Stomatology II | 0.0 |
| PERI 611 | Clinical Stomatology III | 0.0 |
| PERI 612 | Clinical Stomatology IV | 0.0 |
| PERI 613 | Clinical Stomatology V | 0.0 |
| PERI 614 | Clinical Stomatology VI | 0.0 |
| PERI 619 | Journal Club I | 0.0 |
| PERI 620 | Journal Club II | 0.0 |
| PERI 621 | Journal Club III | 0.0 |
| PERI 622 | Journal Club IV | 0.0 |
| PERI 623 | Journal Club V | 0.0 |

| | | |
|----------|--------------------------------------------|-----|
| PERI 624 | Journal Club VI | 0.0 |
| PERI 625 | Orthodontics/Periodontics Seminar | 0.0 |
| PERI 626 | Related Disciplines Seminar | 0.0 |
| PERI 627 | Mock Board Examination I | 0.5 |
| PERI 628 | Mock Board Examination II | 0.5 |
| PERI 629 | Advanced Dental Implants | 1.5 |
| PERI 630 | Periodontal Plastic Surgery | 0.5 |
| PERI 631 | Case Presentation/Treatment Planning I | 0.5 |
| PERI 632 | Case Presentation/Treatment Planning II | 1.0 |
| PERI 633 | Case Presentation/Treatment Planning III | 1.0 |
| PERI 634 | Case Presentation/Treatment Planning IV | 0.5 |
| PERI 635 | Case Presentation/Treatment Planning V | 1.0 |
| PERI 636 | Case Presentation/Treatment Planning VI | 1.0 |
| PERI 637 | Occlusion: Principals/Therapy I | 0.0 |
| PERI 638 | Occlusion: Principals/Therapy II | 1.5 |
| PERI 639 | Periodontal Lecture Series I | 1.5 |
| PERI 640 | Periodontal Lecture Series II | 2.0 |
| PERI 641 | Periodontal Lecture Series III | 1.0 |
| PERI 642 | Periodontal Lecture Series IV | 1.0 |
| PERI 643 | Periodontal Lectures Series V | 2.0 |
| PERI 644 | Practice Teaching I | 2.0 |
| PERI 645 | Practice Teaching II | 2.0 |
| PERI 646 | Practice Teaching III | 2.0 |
| PERI 647 | Practice Teaching IV | 2.0 |
| PERI 648 | Practice Teaching V | 2.0 |
| PERI 649 | Practice Teaching VI | 2.0 |
| PERI 650 | Dental Implants | 1.5 |
| PERI 651 | Periodontal Literature Review I | 1.0 |
| PERI 652 | Periodontal Literature Review II | 2.0 |
| PERI 654 | Periodontal Literature Review IV | 1.0 |
| PERI 655 | Periodontal Literature Review V | 2.0 |
| PERI 656 | Periodontal Literature Review VI | 2.0 |
| PERI 657 | Periodontal Literature Review VII | 2.0 |
| PERI 658 | Periodontal Literature Review VIII | 2.0 |
| PERI 659 | Periodontal Literature Review IX | 2.0 |
| PERI 661 | Moderate Parenteral Conscious Sedation I | 0.5 |
| PERI 662 | Moderate Parenteral Conscious Sedation II | 0.5 |
| PERI 663 | Moderate Parenteral Conscious Sedation III | 0.5 |
| PERI 664 | Moderate Parenteral Conscious Sedation IV | 0.5 |
| PERI 665 | Moderate Parenteral Conscious Sedation V | 0.5 |
| PERI 666 | Moderate Parenteral Conscious Sedation VI | 0.5 |
| PERI 667 | Periodontal Histopathology | 2.0 |

| | | |
|-----------------------------|----------|-----|
| PERI 691 | Research | 2.5 |
| Total Semester Credit Hours | | 52 |

Must complete 34.5 months of residency, total credit hours specified, any noncredit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

The MS in Oral Biology (p. 528) is also required, for which students must complete an additional 32 semester credit hours, conduct a research project, and successfully defend a written thesis.

If an applicant has previously been awarded a PhD, the Program Director may, at his/her discretion, allow the student to complete the required MS using the non-thesis option. The non-thesis MS in Oral Biology consists of 36 hours of courses.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

Department of Public Health Sciences

<http://dentistry.tamhsc.edu/public-health>

The Department of Public Health Sciences at the College of Dentistry focuses on the science and art of preventing and controlling dental diseases and promoting oral health through organized community efforts.

Departmental faculty provide instruction in the prevention of oral disease; risk assessment and risk-based treatment planning; community-based clinical training; behavioral science; dental public health; and geriatric dentistry to dental and dental hygiene students; as well as graduate students.

Community-based clinical training is provided in three extramural clinic settings. Departmental faculty contribute significantly to the teaching component of high school and college enrichment programs offered at the College of Dentistry. The department offers an American Dental Association Council on Dental Accreditation accredited Certificate program in Dental Public Health. The department is responsible for the coordination of community outreach activities.

Departmental faculty conduct extramurally-funded research programs in cariology, oral cancer education, tobacco cessation, the epidemiology of oral diseases, and health policy/health services research.

The department houses the Office of Social Services, which coordinates subsidized care for patients funded by extramural sources, such as Ryan White grant program, the Texas Rehabilitation Council, and others.

Faculty

Abdel Salam, Noha M, Clinical Assistant Professor
Public Health Sciences
DDS, Loma Linda University, 2008

Bitouni, Anneta, Clinical Assistant Professor
Public Health Sciences
DDS, Kapodistrian University of Athens, 2004

Burdette, Kerin L, Clinical Assistant Professor
Public Health Sciences
DDS, University of Missouri - Kansas City, 1995

Crane, Stephen L, Clinical Associate Professor
Public Health Sciences
DDS, Baylor College of Dentistry, 1973

Evans, Dwayne E, Clinical Assistant Professor
Public Health Sciences
DDS, Texas A&M University Baylor College of Dentistry, 1990

Holyfield, Lavern P, Clinical Associate Professor
Public Health Sciences
DDS, Baylor College of Dentistry, 1977

Jones, Daniel L, Regents Professor
Public Health Sciences
DDS, Baylor College of Dentistry, 1989
PHD, Baylor University, 1978

Latortue, Marie C, Clinical Assistant Professor
Public Health Sciences
DDS, State University of Haiti, 2007

Liescheski, Joshua S, Clinical Assistant Professor
Public Health Sciences
DDS, The University of Texas Health Science Center at San Antonio, 2010

Miranda, Malathi S, Clinical Assistant Professor
Public Health Sciences
DDS, Mangalore University, India, 1995

Noureldin, Amal Ahmed K, Clinical Associate Professor
Public Health Sciences
DDS, Cairo University, 1993

Patel, Simmi, Clinical Assistant Professor
Public Health Sciences
DDS, University of Texas Health Science Center-San Antonio, 2001

Rankin, Kathleen V, Professor
Public Health Sciences
DDS, Baylor College of Dentistry, 1977

Timothe, Peggy, Assistant Professor
Public Health Sciences
MPH, Harvard T.H. Chan School of Public Health, 2002

Certificates

- Dental Public Health Certificate

Dental Public Health - Certificate

Offered by the Department of Public Health Sciences at the Texas A&M University College of Dentistry, located in Dallas, Texas, this is a 12-month-equivalent full-time certificate program that begins in late June each year. Up to three new positions may be available each year. All applicants must have a DDS, DMD, or equivalent degree, an MPH or PhD in public health, and a competitive academic record with references. An application may be obtained from: <https://dentistry.tamhsc.edu/graduate-studies/futurestudents>. Each student completes a pre-assessment evaluation prior to entering the program.

The program is guided by the Dental Public Health Competencies developed by the American Board of Dental Public Health.

Upon successful completion of all components of the program, the student receives a Certificate in Dental Public Health and meets the advanced education eligibility requirements of the American Board of Public Health Dentistry. Each student is required to take the written portion of the Qualifying Examination of the American Board of Public Health Dentistry prior to graduating from the program.

For more information about the Certificate in Dental Public Health visit <http://dentistry.tamhsc.edu/public-health>.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License (<http://catalog.tamu.edu/undergraduate/appendices/occupational-licensing>) in our catalog for additional information.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|--------------------------------------------------|-----------------------|
| DPHS 600 | Dental Public Health Practicum | 17.5 |
| DPHS 610 | Practice Transformation | 1.0 |
| DPHS 689 | Special Topics In... | 4.5 |
| OBIO 660 | Teaching Skills for Health Professions Educators | 1.0 |
| Total Semester Credit Hours | | 24 |

Must complete 12 months of residency, total credit hours specified, any noncredit courses specified, and be approved by the Promotions Committee for this certificate to be awarded.

In accordance with Student Rule 10.4.1, grades of S or U may be assigned in certain officially designated certificate courses.

College of Education and Human Development

<http://education.tamu.edu/>

Administrative Officers

Dean - Joyce M. Alexander, Ph.D.

Associate Dean for Faculty Affairs - Fred Nafukho, Ph.D.

Associate Dean for Academic Affairs - Beverly J. Irby, Ph.D.

Associate Dean for Research - Susan A. Bloomfield, Ph.D.

Assistant Dean for Finance and Administration - Suprena Bennett

Assistant Dean for Undergraduate Academic Affairs - Christopher Cherry, Ph.D.

Departments

Departments

Department of Educational Administration and Human Resource Development (p. 556)

Department of Educational Psychology (p. 591)

Department of Health and Kinesiology (p. 630)
 Department of Teaching, Learning and Culture (p. 662)

Interdepartmental Programs

- Education and Social Sciences Advanced Research Methods (ARM) Certificate (p. 555)

Interdisciplinary

- Prevention Science Certificate

Interdepartmental Degree Programs Certificates

- Education and Social Sciences Advanced Research Methods (ARM) Certificate (p. 555)

Education and Social Sciences Advanced Research Methods - Certificate

The Advanced Research Methods (ARM) Certificate is a stand-alone graduate-level certificate in Education and Social Sciences Advanced Research Methods (ARM), offered by the College of Education and Human Development at Texas A&M University. The program allows graduate and non-degree seeking students the opportunity to gain additional training in research methodology, and to obtain academic validation for their efforts. The certificate testifies to a student's successful mastery of advanced competencies in education and social sciences research methods, with emphasis on quantitative or qualitative approaches. The ARM certificate facilitates students' initiation into the academic publication process, and allows them to become more 'marketable' in today's competitive hiring practices, especially in the context of Research Universities with Very High Research Activity.

While the certificate does not show up on your diploma it will be added to your transcript.

Program Requirements

Certificate Requirements

| Code | Title | Semester Credit Hours |
|------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| | Select 4 advanced Quantitative or Qualitative (or mixed methods) Research Methods Courses | 12 |
| | Required for Completion: Evidence of submission of an article, for publication in a peer-reviewed journal, as main author or co-author | |

Current Research Methods Requirements by Departmental Programs for Ph.D. Degrees

| Department/Program | Minimum Research Methods Requirement in credit hours |
|-----------------------------------------------------------|------------------------------------------------------|
| Teaching, Learning and Culture | 15 hours |
| Educational Administration and Human Resource Development | 18 hours |

| | |
|------------------------|------------|
| Educational Psychology | 15 hours |
| Health and Kinesiology | 9-18 hours |

CEHD Courses Approved for Certificate Educational Administration & Human Resource Development

| Code | Title | Semester Credit Hours |
|----------|-----------------------------------------------------------|-----------------------|
| EDAD 623 | Advanced Fieldwork Methods | 3 |
| EHRD 656 | Narrative Analysis | 3 |
| EHRD 657 | Life History Research | 3 |
| EHRD 690 | Theory of Educational Human Resource Development Research | 3 |

Educational Psychology

| Code | Title | Semester Credit Hours |
|----------|-------------------------------------------------------------------|-----------------------|
| EPSY 625 | Advanced Psychometric Theory | 3 |
| EPSY 637 | Qualitative Grounded Theory Methodologies | 3 |
| EPSY 642 | Meta-Analysis of Behavioral Research | 3 |
| EPSY 643 | Applied Multivariate Methods | 3 |
| EPSY 650 | Multiple Regression and Other Linear Models in Education Research | 3 |
| EPSY 651 | Theory of Structural Equation Modeling | 3 |
| EPSY 652 | Theory of Hierarchical Linear Models | 3 |
| EPSY 653 | Advanced Structural Equation Modeling | 3 |
| EPSY 654 | Longitudinal Data Analysis | 3 |
| EPSY 655 | Item Response Theory | 3 |

Health and Kinesiology

| Code | Title | Semester Credit Hours |
|----------|----------------------|-----------------------|
| HLTH 689 | Special Topics in... | 3 |

Teaching, Learning and Culture

| Code | Title | Semester Credit Hours |
|----------|--------------------------------------------------------------|-----------------------|
| EDCI 627 | Teaching and Learning Data Analysis and Uncertainty Concepts | 3 |
| EDCI 628 | Analyzing and Reporting Field Based Research | 3 |
| EDCI 661 | Mixed Methods Research in Curriculum and Instruction | 3 |
| EDCI 688 | Research Methods in EDCI III | 3 |

Department of Educational Administration and Human Resource Development

<http://eahr.tamu.edu>

Head: M. Torres

Graduate Advisor: M. Kuhlmann, K. Smith

The Department of Educational Administration and Human Resource Development offers Masters and Doctoral degrees in both Educational Administration (EDAD) and Educational Human Resource Development (EHRD). Students can select from the following areas of specialization: K-12 Educational Leadership, Higher Education Administration, Student Affairs Administration in Higher Education (SAAHE), Adult Education, and Human Resource Development.

The K-12 Educational Leadership program is designed to enhance the student's leadership skills to manage complex educational systems and to train and supervise personnel. Both the Masters and Doctoral degrees prepare candidates for culturally-responsive leadership, commitment to education, and the skills needed for advanced administrative practice in schools and districts.

In the Higher Education Administration program, students will be prepared for leadership roles in higher education administration, teaching, and research. Higher education is a broad-based area of knowledge and study that examines the management and coordination of programs, policies, and processes pertaining to colleges and universities. Programs, policies, and processes include issues associated with access, admission, assessment, curriculum, diversity, economics, enrollment, equity, faculty, finance, governance, law, learning, organizational behavior, philanthropy, policy, resource management, students, and teaching.

The Student Affairs Administration in Higher Education (SAAHE) curriculum recognizes personal development and learning occurs not only in the classroom, but also in other phases of a student's life while enrolled in college. The SAAHE program supports the educational mission of the institution in furthering the total, ongoing development of students intellectually, emotionally, physically, socially, culturally, and vocationally.

The Adult Education program develops adult education practitioners who are critically reflective, student-centered and committed to social justice. It prepares individuals to administer programs and teach adults in a variety of settings including community centers, community colleges, literacy centers, health care facilities and the workplace.

The Human Resource Development (HRD) program provides students with expertise for improving learning and performance in individual, group, organizational, and international contexts. Students in the HRD program are prepared for a variety of career paths including the professoriate and/or applied settings. Domains addressed in the coursework include lifelong learning, career development, training and development, and organizational development.

For more information on admissions and program requirements, prospective students should visit the department website at <http://eahr.tamu.edu>.

Faculty

Alfred, Mary V, Professor
Educ Admn & Human Resource Dev
PHD, University of Texas, 1995

Bailey, Krista J, Clinical Associate Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 2011

Baumgartner, Lisa M, Associate Professor
Educ Admn & Human Resource Dev
PHD, The University of Georgia, 2000

Beyerlein, Michael M, Professor
Educ Admn & Human Resource Dev
PHD, Colorado State University, 1986

Bowen, Daniel H, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Arkansas, 2013

Brown, Jerry M, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
JD, South Texas College of Law, 1993

Davison, Chayla H, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Denver, 2013

Dirani, Khalil M, Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Illinois-Urbana Champaign, 2007

Dooley, Larry M, Associate Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1989

Fahrenwald, Carl, Clinical Assistant Professor
Educ Admn & Human Resource Dev
EDD, University of South Dakota, 1999

Fowler, Rhonda M, Clinical Assistant Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 2013

Holley, Susan P, Clinical Associate Professor
Educ Admn & Human Resource Dev
EDD, Baylor University, 1991

Irby, Beverly J, Professor
Educ Admn & Human Resource Dev
PHD, University of Mississippi, 1983

Lechuga III, Vicente M, Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Southern California, 2005

Lincoln, Yvonna S, Distinguished Professor
Educ Admn & Human Resource Dev
PHD, Indiana University, 1977

Madsen, Jean A,
Educ Admn & Human Resource Dev
PHD, The University of Kansas, 1986

Mai, Bin, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Texas Dallas, 2006

Mark, Christine L, Clinical Assistant Professor
Educ Admn & Human Resource Dev
PHD, The University of Southern Mississippi, 2014

McNaughten, Dennis Lee, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1993

Musoba, Glenda D, Associate Professor
Educ Admn & Human Resource Dev
PHD, Indiana University, 2004

Muyia, Machuma A, Clinical Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Arkansas, 2008

Nafukho, Fredrick M, Professor
Educ Admn & Human Resource Dev
PHD, Louisiana State University and A&M College, 1998

OPENGART, ROSE, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Georgia, 2003

Poenitzsch, Nicole L, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
EDD, Texas A&M University, 2013

Ponjuan, Luis, Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Michigan, 2005

Roumell, Elizabeth A, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Wyoming, 2009

Sandlin, Judy R, Clinical Associate Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1993

Santos, Rose Anna, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 2013

Smith, Karen S, Clinical Associate Professor
Educ Admn & Human Resource Dev
EDD, Sam Houston State University, 2000

Stanley, Christine A, Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1990

Tolson, Homer, Senior Professor
Educ Admn & Human Resource Dev
PHD, Purdue University, 1968

Torres, Mario S, Professor
Educ Admn & Human Resource Dev
PHD, Pennsylvania State University, 2003

Wang, Jia, Professor
Educ Admn & Human Resource Dev
PHD, University of Georgia, 2004

Watson, Nancy T, Clinical Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1998

Webb-Hasan, Gwendolyn, Associate Professor
Educ Admn & Human Resource Dev
PHD, Illinois State University, 1994

Workman, Michael D, Associate Professor
Educ Admn & Human Resource Dev
PHD, Georgia State University, 2000

Masters

- Master of Education in Educational Administration (p. 562)
- Master of Science in Educational Administration (p. 564)
- Master of Science in Educational Human Resource Development (p. 574)

Doctoral

- Doctor of Education in Educational Administration (p. 557)
- Doctor of Philosophy in Educational Administration (p. 568)
- Doctor of Philosophy in Educational Human Resource Development (p. 578)
- Master of Public Service and Administration (PSAA) and Doctor of Philosophy (EDAD) Collaborative Degree Program (p. 997)

Certificates

- Adult Education Certificate (p. 590)
- College Teaching Certificate (p. 591)

Doctor of Education in Educational Administration

The **Doctor of Education (EdD)** degree is a professional degree designed to prepare a candidate for a position of leadership in the full range of educational settings, including public and private schools and colleges, business, government, industry and the military establishment. The program is designed for the practitioner; a graduate may be expected to fill instructional, supervisory and administrative positions in which educational services are to be rendered.

Although substantively different from the PhD degree in education, the EdD degree requires equivalent admission qualifications, standards of scholarship and breadth and depth of study. Because graduates of the program are expected to demonstrate a high level of professional skill and educational statesmanship, only those candidates who show a consistently high level of professional performance in their academic studies, in their role-related studies, in their internship experience, and in the completion of their records of study will be recommended for the degree. The EdD degree may be earned in agricultural education, educational administration, and curriculum and instruction. Details of the requirements are presented below.

Admission

An applicant must hold the master's degree, provide an academic record acceptable to the department, and may be required to submit scores for the Graduate Record Examination. The requirement for years of professional experience in an educationally related setting varies by program. Please see program admissions information related to this prerequisite. He/she also must complete a written instrument which assesses the knowledge of the requirements and duties of the professional roles to which he/she aspire and demonstrates his/her ability to write with clarity, organization and correctness.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 558)
- Degree Plan (p. 558)
- Transfer of Credit (p. 558)
- Examinations (p. 559)
 - Preliminary Examination (p. 559)
 - Preliminary Examination Format (p. 559)
 - Preliminary Examination Scheduling (p. 559)
 - Report of Preliminary Examination (p. 560)
 - Retake of Failed Preliminary Examination (p. 560)
 - Final Examination (p. 560)
 - Report of Final Examination (p. 560)
- Record of Study (p. 560)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for

us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

Each student's proposed degree plan will be individually designed on the basis of the student's career objectives and the competencies associated with the professional role to which the student aspires. It will contain a minimum of 69 semester hours, including the following components:

1. At least 6 semester hours of proseminars stressing the foundation concepts with which every EdD student should be familiar;
2. A set of courses selected to prepare the candidate for a specific professional role within a field of specialization;
3. One or more courses that develop basic understanding of the procedures and applications of research;
4. At least one supporting field of 12 or more semester hours or two supporting fields of 9 or more semester hours each;
5. A professional internship of at least 6 semester hours related to the professional role to which the student aspires;
6. A record of study involving at least 12 semester hours of credit.

No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the preliminary examination.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved joint degree programs with other Texas A&M University System institutions, credit for theses or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance

of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student’s cumulative GPR is at least 3.000.
- Student’s degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student’s department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been

admitted to candidacy and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Record of Study

The EdD student will produce a major research document called a record of study. The research project may involve such topics as

1. a field study on a problem of major proportions in time or extent;
2. a curriculum development project validated through pilot and field testing; or
3. action research on a curricular, instructional, supervisory or administrative problem based on empirical data.

The EdD student must have primary responsibility for the design and development of the research, and the record of study must be the sole and original work of the candidate.

Whatever the nature of the research project undertaken by the candidate, he or she will be required to prepare a record of study that explains and supports the activities undertaken in the project and supports its conclusions with adequate investigations, empirical data and a comprehensive bibliography. Procedures used in the student's research will be described in sufficient detail for educators in other locations to apply or extend the procedures. All records of study should be characterized by accuracy of observation and measurements, thoroughness of analysis and synthesis, and accuracy and completeness of presentation.

Guidelines for the preparation of the record of study are available in the *Thesis Manual* which is available online at <http://ogaps.tamu.edu>. After successful defense and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her record of study in electronic format as a single PDF file. The PDF file must be uploaded to the website <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A record of study that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 561)
- Continuous Registration (p. 561)
- Internship or Practicum (p. 561)
- 99-Hour Cap on Doctoral Degrees (p. 561)
- Application for Degree (p. 562)

Residence

The residence requirement for the EdD degree is 30 semester credit hours in resident study at Texas A&M University. Of these 30 semester hours, at

least 18 must be taken as a full-time student. The residence requirement must be fulfilled within five consecutive calendar years. This requirement may be satisfied by a student who presents any combination of full-time study during summer sessions of at least five weeks duration and/or work as a full-time student during regular sessions which totals in the aggregate at least 18 semester hours, accomplished within a five-year period beginning with the first course proposed to apply to this requirement.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Continuous Registration

A student in a program leading to the EdD who has completed all coursework on his/her degree plan other than 692 (Professional Study) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Internship or Practicum

Each EdD degree candidate will complete a university-directed internship in a professional employment setting with a minimum duration of 300 clock hours accrued at the rate of 10–40 hours per week. The internship will require of the student full participation and responsibility in experiences directly related to the student's career specialization. Credit for the internship will not be given for a continuation of regular employment activities (e.g., continuing to serve as a junior college teacher or as an elementary school principal), but only for completing an entirely new work experience. The internship may be on a paid or unpaid basis, must be undertaken after the student has a degree plan on file, and must be supported by prior or concurrent coursework (usually toward the end of the degree program). Prior to its beginning, the internship must be approved in writing as to details by all members of the student's doctoral committee. At the conclusion of the internship, a formal written summary of its nature and results must be approved by the student's advisory committee.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students

who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Education in Educational Administration

The Master of Education (MEd) in educational administration is designed for individuals who wish to become leaders in the public school field. This is a non-thesis degree and is offered online. Students are admitted into a cohort which begins each fall semester. Students should complete the program in two years. The degree requires a minimum of 36 hours.

Upon successful completion and with the approval of the program faculty, students may sit for the TExES (state principal examination).

Program Requirements

Program Requirements

Student's Advisory Committee (p. 562)

Degree Plan (p. 562)

Credit Requirement (p. 563)

Transfer of Credit (p. 563)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 563)

Final Examination (p. 563)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **only the chair**. The chair of the advisory committee must be from the student's department.

Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee chair include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee chair is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

There is no final examination for this degree. The student will instead be required to successfully complete a required common course.

Additional Requirements

Additional Requirements

- Residence (p. 563)
- Time Limit (p. 564)
- Foreign Languages (p. 564)
- Internship or Practicum (p. 564)
- Application for Degree (p. 564)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Education degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Educational Administration

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 565)
- Degree Plan (p. 565)
- Credit Requirements (p. 566)
- Transfer of Credit (p. 566)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 566)
- Thesis Option (p. 566)
 - Thesis Proposal (p. 567)
 - Final Examination/Thesis Defense (p. 567)
- Non-Thesis Option (p. 567)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional

Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the “Office of Graduate and Professional Studies Calendar” (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student’s GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master’s degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student’s advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student’s advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student’s major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 568)
- Continuous Registration (p. 568)
- Time Limit (p. 568)
- Foreign Languages (p. 568)
- Application for Degree (p. 568)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Educational Administration

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 569)
- Degree Plan (p. 570)
- Transfer of Credit (p. 570)
- Research Proposal (p. 570)
- Examinations (p. 571)
 - Preliminary Examination (p. 571)
 - Preliminary Examination Format (p. 571)
 - Preliminary Examination Scheduling (p. 571)
 - Report of Preliminary Examination (p. 571)
 - Retake of Failed Preliminary Examination (p. 572)
 - Final Examination (p. 572)
 - Report of Final Examination (p. 572)
- Dissertation (p. 572)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 72 hours is required on the degree plan for the Doctor of Philosophy in Educational Administration for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 72 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 573)
- Time Limit (p. 573)
- Continuous Registration (p. 573)
- Admission to Candidacy (p. 573)
- Languages (p. 573)
- 99-Hour Cap on Doctoral Degree (p. 573)
- Application for Degree (p. 574)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Educational Human Resource Development

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1

Meet with departmental graduate advisor to plan course of study for first semester.

When: Before first semester registration.
Approved by: Graduate advisor or chair of the intercollegiate faculty.

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| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

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| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 575)
- Degree Plan (p. 575)
- Credit Requirements (p. 576)
- Transfer of Credit (p. 576)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 576)
- Thesis Option (p. 576)
 - Thesis Proposal (p. 577)
 - Final Examination/Thesis Defense (p. 577)
- Non-Thesis Option (p. 577)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Science in Educational Human Resource Development has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, the student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings

of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 semester credit hours of approved courses and research is required for the non-thesis option Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies

website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of**

any cancellations. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

The Final Examination is not required for the non-thesis option Master of Science in Educational Human Resource Development.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 578)
- Continuous Registration (p. 578)
- Time Limit (p. 578)
- Foreign Languages (p. 578)
- Application for Degree (p. 578)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time

limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Educational Human Resource Development

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |

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| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h2>Program Requirements</h2> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 579) • Degree Plan (p. 580) • Transfer of Credit (p. 580) • Research Proposal (p. 580) • Examinations (p. 581) <ul style="list-style-type: none"> • Preliminary Examination (p. 581) • Preliminary Examination Format (p. 581) • Preliminary Examination Scheduling (p. 581) • Report of Preliminary Examination (p. 581) • Retake of Failed Preliminary Examination (p. 582) • Final Examination (p. 582) • Report of Final Examination (p. 582) • Dissertation (p. 582) | | |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <h2>Student's Advisory Committee</h2> <p>After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.</p> | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | | |

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 72 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 72 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 583)
- Time Limit (p. 583)
- Continuous Registration (p. 583)
- Admission to Candidacy (p. 583)
- Languages (p. 583)
- 99-Hour Cap on Doctoral Degree (p. 583)
- Application for Degree (p. 584)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Public Service and Administration and Doctor of Philosophy Collaborative Degree Program

The College of Education and Human Development offers a unique, collaborative program with the Bush School of Government and Public Service designed for individuals who intend to build an academic career focused on conducting research in the multidisciplinary field of education policy. This unique academic program will prepare individuals for careers in research universities and teaching colleges, as well as for careers in consultancies or educational agencies of all types (private, non-profit, local, state, federal or international). Ultimately, students who successfully complete all program requirements will receive both a Master of Public Service and Administration (MPSA) degree from

the Bush School of Government and Public Service and a Doctor of Philosophy in Educational Administration (Ph.D.) from the Department of Educational Administration and Human Resource Development, in the College of Education and Human Development.

Program Requirements

Master of Public Service and Administration (p. 584)

Doctor of Philosophy in Educational Administration (p. 585)

Master of Public Service and Administration

- Student's Advisory Committee (p. 584)
- Degree Plan (p. 584)
- Credit Requirements (p. 584)
- Transfer of Credit (p. 584)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 585)
- Final Examination (p. 585)

Student's Advisory Committee

The MPSA student's advisory committee consists of the student's designated faculty advisor and the Head of the Bush School's PSAA Department, who has the responsibility of approving the proposed degree plan for an MPSA student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student in consultation with his or her advisory committee, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the OGAPS calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpss.tamu.edu>.

Credit Requirement

A minimum of 39 semester credit hours of approved courses are required for the Collaborative Degree Program track Master of Public Service and Administration Program: six common courses, two track core courses, three track elective courses, and a two-semester capstone sequence.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in **which no formal grades**

are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.

Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the Master of Public Service and Administration.

Doctor of Philosophy in Educational Administration

- Student's Advisory Committee (p. 585)
- Degree Plan (p. 586)
- Transfer of Credit (p. 586)
- Research Proposal (p. 586)
- Examinations (p. 587)
 - Preliminary Examination (p. 587)
 - Preliminary Examination Format (p. 587)
 - Preliminary Examination Scheduling (p. 587)
 - Report of Preliminary Examination (p. 587)
 - Retake of Failed Preliminary Examination (p. 588)
 - Final Examination (p. 588)
 - Report of Final Examination (p. 588)
- Dissertation (p. 588)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members

located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 72 hours is required on the degree plan for the Collaborative Degree Program track Doctor of Philosophy in Educational Administration for a student who has completed a master's degree. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate

faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary

degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the

degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see

Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Master of Public Service and Administration (p. 589)

Doctor of Philosophy in Educational Administration (p. 589)

Master of Public Service and Administration

- Residence (p. 589)
- Time Limit (p. 589)
- Foreign Languages (p. 589)
- Internship or Practicum (p. 589)
- Application for Degree (p. 589)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Public Service and Administration degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Public Service and Administration degree.

Internship or Practicum

During the summer between their first and second year, a student participates in a non-credit-bearing internship related to his/her career plans. The internship requirement can be waived if the student has at

least two years of recent professional-level public service experience related to his/her career goals and to the degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Educational Administration

- Residence (p. 589)
- Time Limit (p. 589)
- Continuous Registration (p. 590)
- Admission to Candidacy (p. 590)
- Languages (p. 590)
- 99-Hour Cap on Doctoral Degree (p. 590)
- Application for Degree (p. 590)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within

four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not

accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Adult Education - Certificate

The Department of Educational Administration and Human Resource Development offers an Adult Education Certificate. This 12-semester hour certificate will provide learners with the necessary skills to teach adults more effectively in a variety of settings including colleges, health care settings, social services, and business and industry. The educational objectives are as follows: (1) identify, develop, and apply teaching techniques and strategies suitable for adults, (2) examine the nature of adult learning, (3) to identify and apply components in planning and developing an adult education program and (4) apply distance learning principles to training settings.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|----------------------------------------|-----------------------|
| EHRD 616 | Methods of Teaching Adults | 3 |
| EHRD 630 | Adult Learning | 3 |
| EHRD 642 | Program Development in Adult Education | 3 |
| EHRD 673 | Introduction to Distance Learning | 3 |
| Total Semester Credit Hours | | 12 |

College Teaching - Certificate

Today, colleges and universities expect future faculty to be equally skilled in research and teaching. The Department of Educational Administration and Human Resource Development in the College of Education and Human Development offers a College Teaching Certificate Program for masters and doctoral level graduate students across the university who are interested in learning and applying the scholarship of teaching and learning.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------|-------------------------------------|-----------------------|
| EDAD 601 | College Teaching | 3 |
| EDAD 684 | Internship | 3 |
| Select two of the following: ¹ | | 6 |
| ALEC 610 | Principles of Adult Education | |
| EDAD 602 | The Community College | |
| EDAD 603 | Advanced Student Development Theory | |
| EDAD 669 | The College Student | |
| EHRD 616 | Methods of Teaching Adults | |
| EHRD 630 | Adult Learning | |
| Total Semester Credit Hours | | 12 |

¹ May select other electives as approved by the College Teaching Certificate Coordinator.

Department of Educational Psychology

<http://epsy.tamu.edu>

The Department of Educational Psychology offers a variety of degrees associated with learning and cognition, human development, instructional design, and individual differences. Students interested in graduate studies within the department should exhibit an orientation toward fostering human development and possess characteristics conducive to supporting relationships and advancing educational and societal improvements. Faculty admissions committees within each degree and emphasis program carefully review applicants' professional references, prior experiences, selected test scores, and career goals. Finalists are interviewed by appropriate groups of faculty members and formal admission to a degree program, area of emphasis, or certification program is contingent upon the admissions committee's determination regarding an applicant's total fitness and promise as a professional in the area for which application is made.

Doctor of Philosophy (Ph.D.) Degrees

The department offers three Ph.D. degrees in Educational Psychology, Counseling Psychology, and School Psychology. The Counseling Psychology and School Psychology programs are nationally accredited by the American Psychological Association. Students pursuing a Ph.D. in Educational Psychology apply to one of five distinct emphasis programs: (a) Bilingual Education; (b) Developmental Sciences; (c) Learning Design and Technology; (d) Research, Measurement, and Statistics; or (e) Special Education.

Field experiences in appropriate schools, colleges, or social agencies are required in all degree programs. Doctoral students in Counseling Psychology and School Psychology are required to undertake a series of supervised professional training experiences in addition to formal coursework and must successfully complete one year of full-time, professional internship prior to graduation.

All of the department's Ph.D. programs prepare graduates for academic positions in university and research settings. Non-academic careers may also be pursued in areas appropriate to one's programs of study. For example, graduates of the Counseling Psychology program are also prepared to become licensed counseling psychologists in a range of public and/or mental health settings including college and university counseling centers. School Psychology graduates may become licensed school psychologists who practice in education or health care settings.

Many doctoral students who participate in the Learning Design and Technology program become instructional designers and technology leaders within public schools, institutions of higher education, and commercial business industries.

Master of Science (M.S.) Degrees

The department offers M.S. degrees in Bilingual Education, Educational Psychology, and Special Education; each of these degrees requires successful completion of a thesis in addition to coursework. Students pursuing an M.S. in Educational Psychology pursue a program of study in either (a) Developmental Sciences; or (b) Research, Measurement, and Statistics.

Master of Education (M.Ed.) Degrees

The department also offers M.Ed. degrees in Bilingual Education, Special Education, Educational Technology, and Educational Psychology. Students pursuing an M.Ed. in Educational Psychology apply to one of four distinct emphasis programs in (a) Creativity and Cognition; (b) Developmental Sciences; (c) Research, Measurement, and Statistics; or (d) School Counseling. The school counseling program prepares practicing teachers for certification by the Texas Education Agency to become practicing school counselors.

Graduate Programs Delivered via Distance Education

Designed with the working professional in mind, many of the department's professional master's degree programs are offered fully online. Degree programs delivered via distance education include Bilingual Education (M.Ed./M.S.), Special Education (M.Ed./M.S.), Educational Technology (M.Ed.), and Educational Psychology emphasis programs in School Counseling (M.Ed.), and Creativity and Cognition (M.Ed.).

Real World Application

The Department of Educational Psychology has a broad range of research and outreach endeavors that serve as a vehicle for graduate student preparation while also enabling us to serve the University, local schools, and communities throughout the state of Texas. The department boasts multiple innovative research labs and clinics, a university-designated center on *Dual-Language and Literacy Acquisition*, and a federally designated center on *Disability and Development*. For the past eighteen years the department's *Counseling and Assessment Clinic* has provided more than 30,000 hours of assessment and counseling services to more than 2,600 individuals in the local community. We also established a *Telehealth Counseling Clinic* and partner with the School of Rural Public Health to provide mental health services to a growing

number of underserved communities throughout south central Texas using video conference technology via HIPPA-approved encryption and high-speed lines. These telehealth services are provided by a team of advanced counseling psychology doctoral students in close collaboration with doctoral-level supervising faculty who are licensed psychologists or otherwise licensed mental health professionals. Cutting-edge research and outreach efforts such as these afford valuable apprenticeship opportunities for graduate students while helping fulfill Texas A&M University's land-grant mission.

Due to the nature of professional training involved and necessary prerequisite skills, enrollment in some of the department's graduate courses is limited to students admitted to a specific major or areas of study. Approval by the department head is required for enrollment in those courses.

Faculty

Acosta, Sandra T, Associate Professor
Educational Psychology
PHD, Texas A&M University, 2010

Alexander, Joyce M, Professor
Educational Psychology
PHD, University of Georgia, 1992

Baek, Eunhyang, Assistant Professor
Educational Psychology
PHD, University of South Florida, 2015

Blake, Jamilia J, Associate Professor
Educational Psychology
PHD, University of Georgia, 2007

Brossart, Dan F, Associate Professor
Educational Psychology
PHD, University of Missouri - Columbia, 1996

Burke, Mack D, Associate Professor
Educational Psychology
PHD, University of Oregon, 2001

Burke, Shanna H, Professor
Educational Psychology
PHD, University of Oregon, 1998

Byrns, Glenda E, Clinical Professor
Educational Psychology
PHD, Texas A&M University, 2007

Castillo, Linda G, Professor
Educational Psychology
PHD, University of Utah, 1999

Castro Olivo, Sara M, Associate Professor
Educational Psychology
PHD, University of Oregon, 2007

Dickey, Margot B, Adjunct Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2015

Elliott, Timothy R, Distinguished Professor
Educational Psychology
PHD, University of Missouri - Columbia, 1987

Erbeli, Florina, Assistant Professor
Educational Psychology
PHD, University of Ljubljana, 2015

Ettekal, Idean, Assistant Professor
Educational Psychology
PHD, Arizona State University, 2016

Fogarty, Melissa S, Clinical Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2012

Fournier, Constance J, Clinical Professor
Educational Psychology
PHD, University of Texas at Austin, 1987

Gagne, Jeffrey R, Assistant Professor
Educational Psychology
PHD, Boston University, 2008

Ganz, Jennifer, Professor
Educational Psychology
PHD, University of Kansas, 2002

Gilson, Carly B, Assistant Professor
Educational Psychology
PHD, Vanderbilt University, 2017

Heath, Amy K, Adjunct Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2012

Juntune, Joyce E, Instructional Professor
Educational Psychology
PHD, Texas A&M University, 1997

Kwok, Oi-Man, Professor
Educational Psychology
PHD, Arizona State University, 2005

Lara-Alecio, Rafael, Regents Professor
Educational Psychology
PHD, University of Utah, 1991

Liew, Jeffrey C, Professor
Educational Psychology
PHD, Arizona State University, 2005

Luo, Wen, Associate Professor
Educational Psychology
PHD, Texas A&M University, 2007

Lynch, Patricia S, Adjunct Professor
Educational Psychology
PHD, Texas A&M University, 1992

Montague, Marcia L, Visiting Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2009

Newell, Kirsten, Assistant Professor
Educational Psychology
PHD, University of Minnesota - Twin Cities, 2018

Ompendoguet, Lizette O, Associate Professor
Educational Psychology
PHD, University of Missouri - Columbia, 2009

Padron, Yolanda, Professor
Educational Psychology
EDD, University of Houston, 1985

Palmer, Douglas J, Professor Emeritus
Educational Psychology
PHD, University of California - Los Angeles, 1977

Pedersen, Susan J, Associate Professor
Educational Psychology
PHD, University of Texas at Austin, 2000

Perrott, Lisa J, Associate Professor
Educational Psychology
PHD, University of Virginia, 2001

Rae, William A, Clinical Professor
Educational Psychology
PHD, University of Texas at Austin, 1975
PHD, University of Texas at Austin, 1975

Ramos Garcimartin, Hector, Assistant Lecturer
Educational Psychology
PHD, Texas A&M University, 2015

Ramos, Suzanna J, Assistant Lecturer
Educational Psychology
PHD, Texas A&M University, 2015

Riccio, Cynthia A, Professor
Educational Psychology
PHD, University of Georgia, 1993

Ridley, Charles R, Professor
Educational Psychology
PHD, University of Minnesota, 1978

Rivera, Hector H, Associate Professor
Educational Psychology
PHD, University of California-Santa Cruz, 2001

Simmons, Deborah C, Emerita
Educational Psychology
PHD, Purdue University, 1986

Simmons, Krystal T, Clinical Associate Professor
Educational Psychology
PHD, Texas A&M University, 2009

Smith, Leann, Assistant Professor
Educational Psychology
PHD, University of Texas at Austin, 2017

Sohn McCormick, Anita, Adjunct Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2000

Stackhouse, Elizabeth Wood, Lecturer
Educational Psychology
PHD, Texas A&M University, 2018

Stough, Laura M, Associate Professor
Educational Psychology
PHD, University of Texas, 1993

Sweany, Noelle W, Clinical Associate Professor
Educational Psychology
PHD, University of Texas at Austin, 1999

Thompson, Christopher G, Assistant Professor
Educational Psychology
PHD, Florida State University, 2016

Thompson, Julie L, Assistant Professor
Educational Psychology
PHD, University of North Carolina at Charlotte, 2014

Tong, Fuhui, Professor
Educational Psychology
PHD, Texas A&M University, 2006

Vannest, Kimberly J, Professor
Educational Psychology
PHD, Louisiana State University, 2000

Walichowski, Miranda F, Clinical Associate Professor
Educational Psychology
PHD, Texas A&M University, 2009

Woltering, Steven, Assistant Professor
Educational Psychology
PHD, University of Toronto, 2012

Woodward, Robert S, Clinical Associate Professor
Educational Psychology
PHD, Texas A&M University, 2004

Yoon, Myeongsun, Associate Professor
Educational Psychology
PHD, Arizona State University, 2007

Zhang, Dan D, Professor
Educational Psychology
PHD, University of New Orleans, 1998

Masters

- Master of Education in Bilingual Education (p. 594)
- Master of Education in Educational Psychology (p. 605)
- Master of Education in Educational Technology (p. 616)
- Master of Education in Special Education (p. 624)
- Master of Science in Bilingual Education (p. 595)
- Master of Science in Educational Psychology (p. 607)
- Master of Science in Special Education (p. 625)

Doctoral

- Doctor of Philosophy in Counseling Psychology (p. 599)
- Doctor of Philosophy in Educational Psychology (p. 610)
- Doctor of Philosophy in School Psychology (p. 618)

Certificates

- Applied Behavior Analysis Certificate (p. 630)
- Latino Mental Health Certificate (p. 630)

Master of Education in Bilingual Education

The Department of Educational Psychology offers a Master of Education (M.Ed.) in Bilingual Education that requires a minimum of 36 hours of coursework and a passing score on a comprehensive final examination.

This non-thesis degree program is delivered via distance education to accommodate working professionals. Graduates are prepared to assume instructional leadership positions focusing on the educational needs of bilingual and dual language learners.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 594)
- Degree Plan (p. 594)
- Credit Requirement (p. 594)
- Transfer of Credit (p. 594)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 594)
- Final Examination (p. 595)

Student's Advisory Committee

Upon admission to graduate studies and enrollment, the student will be appointed a chair for his or her advisory committee. For the **M.Ed. in Bilingual Education**, the advisory committee will consist of **no fewer than three members of the graduate faculty** representative of the student's field of study. The chair must be a member of the graduate faculty, from the student's department, and located on a Texas A&M University campus. Other Texas A&M University graduate faculty members located off-campus may serve as member or co-chair (but not chair) of student advisory committees.

If the chair voluntarily leaves the University near completion of a student's degree, the student may select another chair, or has the option of working through the Department Head to secure permission from the Office of Graduate and Professional Studies for the chair to continue in his or her role for up to one year. Extensions beyond the one year period can be granted pending additional approval from the Dean.

Advisory committee members' approval of the degree plan indicate their willingness to accept responsibility for guiding and directing the student's entire academic program and to initiate all academic actions concerning the student. The chair typically provides immediate supervision of the student's research and is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.** This

proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>. Additional coursework may be added to an approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the chair and program faculty, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would have been accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework for which no formal grades were given or for which grades other than letter grades (A or B) were earned (for example, CR, P, S, U, H, etc.) will not be accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours that may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses

would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The Final Examination is not required for a Master of Education degree in Bilingual Education.

Additional Requirements

Additional Requirements

- Residence (p. 595)
- Time Limit (p. 595)
- Foreign Languages (p. 595)
- Internship or Practicum (p. 595)
- Application for Degree (p. 595)

Residence

The distance education modality does not have any residence requirement.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Bilingual Education

Master of Science in Bilingual Education

The Department of Educational Psychology offers a Master of Science (M.S.) in Bilingual Education. This 36-hour degree program requires a thesis and is offered via distance education to accommodate working professionals. Graduates are prepared to assume instructional leadership positions focusing on the educational needs of bilingual and dual language learners.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 596)
- Degree Plan (p. 597)
- Credit Requirements (p. 597)
- Transfer of Credit (p. 597)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 597)
- Thesis Option (p. 598)
 - Thesis Proposal (p. 598)
 - Final Examination/Thesis Defense (p. 598)
- Non-Thesis Option (p. 599)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirements

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which**

no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research

compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office

of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Master of Science in Bilingual Education does not offer a Non-Thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 599)
- Continuous Registration (p. 599)
- Time Limit (p. 599)
- Foreign Languages (p. 599)
- Application for Degree (p. 599)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Counseling Psychology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

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|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | <p>When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.</p> <p>Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS.</p> | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. | |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | <p>When: At least 20 working days prior to the submission of the Request for the Final Examination.</p> <p>Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS.</p> | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | <p>When: Before submitting request to schedule final examination.</p> <p>Approved by: OGAPS</p> | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> | | |
| 7 | Apply for degree; pay graduation fee. | <p>When: During the first week of the final semester; see OGAPS calendar for deadlines.</p> | <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none">• Student's Advisory Committee (p. 600)• Degree Plan (p. 601)• Transfer of Credit (p. 601)• Research Proposal (p. 601)• Examinations (p. 602)<ul style="list-style-type: none">• Preliminary Examination (p. 602)• Preliminary Examination Format (p. 602)• Preliminary Examination Scheduling (p. 602)• Report of Preliminary Examination (p. 602)• Retake of Failed Preliminary Examination (p. 603)• Final Examination (p. 603)• Report of Final Examination (p. 603)• Dissertation (p. 603) | | |
| 8 | Submit request for permission to hold and announce final examination. | <p>When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines.</p> <p>Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS.</p> | <h2>Student's Advisory Committee</h2> <p>After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.</p> <p>If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University</p> | | |
| 9 | Successfully complete final examination. | <p>When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam.</p> <p>Approved by: Advisory committee and OGAPS</p> | | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | <p>When: See OGAPS calendar for deadlines.</p> <p>Approved by: Advisory committee, department</p> | | | |

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 604)
- Time Limit (p. 604)
- Continuous Registration (p. 604)
- Admission to Candidacy (p. 604)
- Languages (p. 604)
- 99-Hour Cap on Doctoral Degree (p. 604)
- Application for Degree (p. 605)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Education in Educational Psychology

The Department of Educational Psychology offers a Master of Education (M.Ed.) degree in Educational Psychology geared toward those who wish to pursue careers in educational settings, academia, or the corporate world. Students are admitted into one of four distinct specialization program options:

- Creativity and Cognition
- Developmental Sciences
- Research, Measurement, and Statistics
- School Counseling

Graduates pursue careers as master teachers, instructional designers, intervention specialists, school counselors, and technology leaders.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 605)
- Degree Plan (p. 605)
- Credit Requirement (p. 605)

- Transfer of Credit (p. 605)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 606)
- Final Examination (p. 606)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

Upon admission to graduate studies and enrollment, the student will be appointed a chair for his or her advisory committee. The advisory committee will be comprised of one or more members (one of whom will serve as the chair) and may include up to three members. The chair must be a member of the graduate faculty, from the student's department, and located on a Texas A&M University campus. Other Texas A&M University graduate faculty members located off-campus may serve as member or co-chair (but not chair) of student advisory committees.

If the chair voluntarily leaves the University near completion of a student's degree, the student may select another chair or has the option of working through the Department Head to secure permission from the Office of Graduate and Professional Studies for the chair to continue in his or her role for up to one year. Extensions beyond the one year period can be granted with additional approval from the Dean.

A chair's signature on the degree plan indicates his or her willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. The chair typically provides immediate supervision of the student's research and is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's chair, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.** This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>. Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the chair and

program faculty and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework for which no formal grades were given or for which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:

- A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The Final Examination is not required for the Master of Education in Educational Psychology.

Additional Requirements

Additional Requirements

- Residence (p. 606)
- Time Limit (p. 607)
- Foreign Languages (p. 607)
- Internship or Practicum (p. 607)
- Application for Degree (p. 607)

Residence

On-Campus Degree Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Education degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Educational Psychology

The Department of Educational Psychology offers Master of Science (M.S.) in Educational Psychology. This 36-hour degree program requires a thesis and enables students to pursue a program of study in either (a) Developmental Sciences; or (b) Research, Measurement, and Statistics.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1 Meet with departmental graduate advisor to plan course of study for first semester.
When: Before first semester registration.
Approved by: Graduate advisor or chair of the intercollegiate faculty.

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| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

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| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 608)
- Degree Plan (p. 608)
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Student's Advisory Committee

On-Campus and Distance Education Degree Programs

Upon admission to graduate studies and enrollment, the student will be appointed a chair for his or her advisory committee. The chair, in consultation with the student, will select the remaining advisory committee members. The committee will consist of **no fewer than three members of the graduate faculty** who are representative of the student's field of study. **At least one advisory committee member must have an appointment to a department other than the student's major department.** Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair. The committee chair or co-chair must be from the student's department, and the outside member for students in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the

case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

The M.S. in Educational Psychology requires a minimum of 32 semester credit hours of approved courses and research. Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree in Educational Psychology. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submission deadlines must be met during the resubmission process to graduate that semester.

Thesis Proposal

For the Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety (<http://rcb.tamu.edu>) website.

Final Examination/Thesis Defense

A student pursuing a M.S. in Educational Psychology must successfully defend his or her thesis by dates announced each semester or summer

term in the Office of Graduate and Professional Studies Calendar. To be eligible to defend the thesis, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. An approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 610)
- Continuous Registration (p. 610)
- Time Limit (p. 610)
- Foreign Languages (p. 610)
- Application for Degree (p. 610)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Educational Psychology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired

the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | | | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 612)
- Degree Plan (p. 612)
- Transfer of Credit (p. 612)
- Research Proposal (p. 613)
- Examinations (p. 613)
 - Preliminary Examination (p. 613)
 - Preliminary Examination Format (p. 613)
 - Preliminary Examination Scheduling (p. 613)
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 - Retake of Failed Preliminary Examination (p. 614)
 - Final Examination (p. 614)
 - Report of Final Examination (p. 615)
- Dissertation (p. 615)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 615)
- Time Limit (p. 615)

- Continuous Registration (p. 615)
- Admission to Candidacy (p. 616)
- Languages (p. 616)
- 99-Hour Cap on Doctoral Degree (p. 616)
- Application for Degree (p. 616)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Education in Educational Technology

The Department of Educational Psychology offers a non-thesis program that leads to the degree of **Master of Education (M.Ed.) in Educational Technology**. This degree is offered in distance education format and requires a minimum of 36 hours of coursework.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 616)
- Degree Plan (p. 617)
- Credit Requirement (p. 617)
- Transfer of Credit (p. 617)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 617)
- Final Examination (p. 617)

Student's Advisory Committee

Upon admission to graduate studies and enrollment, the student will be appointed a chair for his or her advisory committee. For the M.Ed. in Educational Technology, the chair will function as the sole member the advisory committee. The chair must be a member of the graduate faculty, from the student's department, and located on a Texas A&M University campus. Other Texas A&M University graduate faculty members located off-campus may serve as member or co-chair (but not chair) of student advisory committees.

If the chair voluntarily leaves the University near completion of a student's degree, the student may select another chair, or has the option of working through the Department Head to secure permission from the Office of Graduate and Professional Studies for the chair to continue in his or her role for up to one year. Extensions beyond the one year period may be granted pending additional approval from the Dean.

A chair's signature on the degree plan indicates his or her willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. The chair typically provides immediate supervision of the

student's research and is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's chair, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.** This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>. Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the chair and program faculty and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework for which no formal grades were given or for which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A Final Examination is not required for the Master of Education degree in Educational Technology.

Additional Requirements

Additional Requirements

- Residence (p. 618)
- Time Limit (p. 618)
- Foreign Languages (p. 618)
- Internship or Practicum (p. 618)
- Application for Degree (p. 618)

Residence

The distance education modality does not have any residence requirement.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

Master of Education in Educational Technology students are not required to do an internship or practicum.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in School Psychology

Work leading to the degree of **Doctor of Philosophy (PhD)** in School Psychology is designed to provide the candidate with thorough and comprehensive knowledge of his or her professional field, advanced training in methods of research, and specific competencies required for clinical practice. The final basis for granting a degree in School Psychology shall be the candidate's (a) grasp of the subject matter of a broad field of study, (b) demonstrated ability to conduct independent research and accurately convey relevant findings, and (c) demonstrated competencies for practice as a health service professional. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence, or technical requirements, although these conditions must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM, or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For students who have completed a baccalaureate degree (but not a master's degree or a DDS/DMD, DVM, or MD at a U.S. institution), a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete coursework detailed on degree plan. | When: Before preliminary examination. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: No later than 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete practicum. | When: In consultation with committee, before submitting request to schedule final examination. Approved by: Department practicum coordinator. |
| 7 | Complete residence requirement. | When: Before submitting request to schedule final oral examination. Approved by: OGAPS |
| 8 | Apply for degree; pay graduate fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 9 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 10 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 11 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 12 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 619)
- Degree Plan (p. 620)
- Transfer of Credit (p. 620)
- Research Proposal (p. 620)
- Examinations (p. 620)
 - Preliminary Examination (p. 620)
 - Preliminary Examination Format (p. 621)
 - Preliminary Examination Scheduling (p. 621)
 - Report of Preliminary Examination (p. 620)
 - Retake of Failed Preliminary Examination (p. 621)
 - Final Examination (p. 622)
 - Report of Final Examination (p. 622)
- Dissertation (p. 622)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

- Residence (p. 623)
- Time Limit (p. 623)

- Continuous Registration (p. 623)
- Admission to Candidacy (p. 623)
- Languages (p. 623)
- 99-Hour Cap on Doctoral Degree (p. 623)
- Application for Degree (p. 624)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Education in Special Education

The Department of Educational Psychology offers a non-thesis program that leads to the degree of **Master of Education (M.Ed.) in Special Education**. This entire degree is offered in distance education format and requires a minimum of 36 hours of coursework and a passing score on a comprehensive final examination. Successful completion of this degree can also lead to a Texas A&M University transcribed certificate in *Applied Behavior Analysis*.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 624)
- Degree Plan (p. 624)
- Credit Requirement (p. 624)
- Transfer of Credit (p. 624)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 625)
- Final Examination (p. 625)

Student's Advisory Committee

Upon admission to graduate studies and enrollment, the student will be appointed a chair for his or her advisory committee. For the M.Ed. in Special Education, the chair may function as the sole member of a student's advisory committee. The chair must be a member of the graduate faculty, from the student's department, and located on a Texas A&M University campus. Other Texas A&M University graduate faculty members located off-campus may serve as member or co-chair (but not chair) of student advisory committees.

If the chair voluntarily leaves the University near completion of a student's degree, the student may select another chair or has the option of working through the Department Head to secure permission from the Office of Graduate and Professional Studies for the chair to continue in that role for up to one year. Extensions beyond the one year period can be granted pending additional approval from the Dean.

A chair's signature on the degree plan indicates his or her willingness to accept the responsibility for guiding and directing the student's entire academic program and for initiating all academic actions concerning the student. The chair typically provides immediate supervision of the student's research and is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's chair, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.** This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>. Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the chair and program faculty and with the approval of the Office of Graduate and Professional Studies. Courses with a final grade of B or greater that were taken in residence at an accredited U.S. institution or approved international institution may be considered for transfer credit if, at the time the courses were completed, the courses would have been accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework for which no formal grades were given or for which grades other than letter grades (A or B) were earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

MEd SPED Final Examination section:

The Final Examination is not required for the Master of Education degree in Special Education.

Additional Requirements

Additional Requirements

- Residence (p. 625)
- Time Limit (p. 625)
- Foreign Languages (p. 625)
- Internship or Practicum (p. 625)
- Application for Degree (p. 625)

Residence

The distance education modality does not have any residence requirement.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

Master of Education in Special Education students are not required to do an internship or practicum.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Special Education

The Department of Educational Psychology offers a thesis or non-thesis option that leads to the degree of **Master of Science (M.S.) in Special Education**. This degree is offered in distance education format, requires a minimum of 36 hours of coursework, and a passing score on the comprehensive final examination. Successful completion of this degree can lead to a Texas A&M University Transcribed Certificate in Applied Behavior Analysis.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 626)
- Degree Plan (p. 627)
- Credit Requirements (p. 627)
- Transfer of Credit (p. 627)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 627)
- Thesis Option (p. 628)
 - Thesis Proposal (p. 628)
 - Final Examination/Thesis Defense (p. 628)
- Non-Thesis Option (p. 629)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other

than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 629)
- Continuous Registration (p. 629)
- Time Limit (p. 629)
- Foreign Languages (p. 629)
- Application for Degree (p. 629)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Applied Behavior Analysis - Certificate

The Department of Educational Psychology offers an **Applied Behavior Analysis Certificate** designed for school-based professionals, direct service providers, job coaches, or family members seeking skills to support individuals with challenging behaviors, autism spectrum disorders, developmental disabilities, or other unique needs that require behavioral interventions.

Program Requirements

The Behavior Analyst Certification Board, Inc.® has approved the following course sequence as meeting the coursework requirements for eligibility to take the Board Certified Behavior Analyst® Examination.

| Code | Title | Semester Credit Hours |
|-----------------------------|-----------------------------------------------------------------------------------------|-----------------------|
| EPSY 630 | Single-Case Experimental Design | 3 |
| SEFB 618 | Applied Behavior Management in the Classroom | 3 |
| SPED 602 | Ethics and Professional Conduct in Special Education and Applied Behavior Analysis | 3 |
| SPED 609 | Educating Individuals with Autism Spectrum Disorders | 3 |
| SPED 642 | Prevention, Support, and Intervention for Students with Emotional and Behavior Problems | 3 |
| SPED 699 | Advanced Applied Behavior Analysis | 3 |
| Total Semester Credit Hours | | 18 |

Latino Mental Health - Certificate

The Graduate Certificate in Latino Mental Health offers graduate students in doctoral professional psychology programs an opportunity to receive in-depth training in Latino mental health. Using a scientist-practitioner approach, the program requires students to complete practice and research oriented courses.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|--------------------------------------------------------------|-----------------------|
| CPSY 637 | Latino Psychology | 3 |
| CPSY 683 | Field Practicum | 3 |
| CPSY 691 | Research (Dissertation - Latino Mental Health based) | 3 |
| Select one of the following: | | 3 |
| EDCI 710 | The Hispanic Learner in Urban Settings | |
| HISP 600 | Introduction to Hispanic Studies | |
| HISP 618 | Hispanic Traditional and Popular Culture and Religion | |
| SOCI 647 | Seminar in Demography and Human Ecology (Migration) | |
| SOCI 647 | Seminar in Demography and Human Ecology (U.S.-Mexico Border) | |

SOCI 667 Seminar in Race and Ethnic Relations

Total Semester Credit Hours

12

Department of Health and Kinesiology

<http://hlknweb.tamu.edu>

Head: R. B. Kreider

The following graduate degrees are offered in the department.

Master of Science (MS) in Athletic Training: is an entry-level athletic training program for students who do not hold a bachelor's degree in athletic training but who wish to pursue athletic training credentials by the Board of Certification (BOC) and pursue a career as a Certified Athletic Trainer (ATC). Admission to the Master of Science in Athletic Training (MSAT) program at Texas A&M University is selective and competitive with the total number of students accepted each year based on space availability. Students wishing to pursue a Master of Science degree in Athletic Training must apply and meet all general requirements for admission to the Graduate School of Texas A&M University and the Department of Health and Kinesiology's MSAT program. Acceptance by the Graduate School does not guarantee acceptance into the MSAT Program. For application requirements and prerequisites, visit the MSAT program webpage at <http://graduateathletictraining.tamu.edu>.

Once admitted into the Master of Science in Athletic Training program, students must meet the retention and progression criteria for the program as described on the MSAT program webpage (<http://hlknweb.tamu.edu/sites/hlknweb.tamu.edu/files/Retention%20and%20Progression.pdf>).

Joint Bachelor of Science/Master of Science (BS/MS) in Health

Education: Allows for a seamless transition from the B.S. degree to the MS degree for exceptional undergraduate students. The program is designed to prepare advanced level health educators.

Master of Science (MS) in Health Education: is a theory-based degree that provides advanced training with emphases in health education. There are non-thesis and thesis options.

Master of Science (MS) in Kinesiology: provides advanced training in the general area of kinesiology with an emphasis on research. Within this broad option, students may elect more specialized study in clinical exercise physiology, exercise physiology, motor behavior, sport pedagogy and sport physiology. Both thesis and non-thesis options are offered.

Master of Science (MS) in Sport Management: provides advanced training in the general area of sport management. Both thesis and non-thesis options are offered.

Doctor of Philosophy (PhD) in Health Education: prepares students for research in health education. Graduates may aspire to research-oriented positions in public or higher education and schools of allied health as well as voluntary or governmental health and/or safety agencies. Graduates of this program are prepared for careers in teaching and research in each of these areas.

Doctor of Philosophy (PhD) in Kinesiology: prepares students for post-doctoral appointments and positions in universities, industry, the military

and research institutes. Graduates are trained for teaching and research careers in the following specialization.

Exercise Physiology: The program prepares students to conduct research in basic and applied exercise physiology. Emphases in the applied programs are in neuromuscular efficiency and control, cardiorespiratory response to exercise, exercise and lipid metabolism, and changes in bone structure and metabolism in response to exercise as well as disuse, bed rest and micro gravity. Emphases in basic research include mechanisms of exercise-induced injury, neuromuscular efficiency, muscle blood flow, muscle metabolism and free radical stress, and the molecular biology of bone adaptation to stress.

Motor Behavior: The program is experimentally oriented and is specifically designed to provide students with a thorough foundation in the theoretical processes that assist the performance and learning of perceptual-motor skills. Emphases in motor learning, motor control and motor development are offered.

Sport Management: The program prepares students to conduct research in applied and basic areas of sport management. Emphases in the applied areas are in organizational and group diversity; the underrepresentation of women and ethnic minorities in sport organizations; organizational effectiveness; organizational structure and strategy; organizational change; sport marketing; and consumer behavior. Emphases in the basic areas focus on relational demography; intergroup processes; and sport consumer behavior. Special areas of research correspond to those of the sport management faculty.

Sport Pedagogy: This specialization prepares students to design and conduct research on teaching/teacher education and curriculum and instruction, with an emphasis on linking theory to physical education practice. Interdisciplinary collaboration and research across the College of Education and Human Development are viewed as integral components of the sport pedagogy program.

Faculty

Alvarez, Andrea, Instructional Assistant Professor
Health & Kinesiology
MFA, Case Western Reserve University, 2016

Apostolopoulos, Yiorgos, Associate Professor
Health & Kinesiology
PHD, University of Connecticut, 1994

Armstrong, Carisa L, Clinical Associate Professor
Health & Kinesiology
MFA, Case Western Reserve University, 2002

Baetge, Claire C, Clinical Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2014

Baletka, Dawn M, Instructional Assistant Professor
Health & Kinesiology
PHD, Sam Houston State University, 2006

Ballard, Danny J, Adjunct Professor
Health & Kinesiology
PHD, Oklahoma State University, 1982

Ballouli, Khalid W, Adjunct Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2011

Barry, Adam, Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2007

Batista, Paul J, Associate Professor
Health & Kinesiology
JD, Baylor University, 1976

Bedford, Diane C, Clinical Assistant Professor
Health & Kinesiology
MFA, The Florida State University, 2010

Bennett, Gregg R, Professor
Health & Kinesiology
PHD, Auburn University, 1997

Bergeron, Christine S, Clinical Professor
Health & Kinesiology
MFA, Florida State University, 1998

Bloomfield, Susan A, Professor
Health & Kinesiology
PHD, Ohio State University, 1992

Boucher, Anthony M, Clinical Associate Professor
Health & Kinesiology
PHD, Texas Women's University, 2008

Brison, Natasha T, Assistant Professor
Health & Kinesiology
PHD, University of Georgia, 2015
JD, University of Georgia School of Law, 1998

Buchanan, John J, Professor
Health & Kinesiology
PHD, Florida Atlantic University, 1996

Campbell, August J, Instructional Associate Professor
Health & Kinesiology
PHD, Texas State University, 2005

Chen, Lei-Shih, Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2007

Crouse, Stephen F, Professor
Health & Kinesiology
PHD, The University of New Mexico, 1984

Cunningham, George B, Professor
Health & Kinesiology
PHD, The Ohio State University, 2002

Deutz, Nicolaas, Professor
Health & Kinesiology
MD, University of Amsterdam, 1988

Dixon, Marlene A, Professor
Health & Kinesiology
PHD, Ohio State University, 2002

Eliot, John F, Clinical Associate Professor
Health & Kinesiology
PHD, University of Virginia, 1998

Engelen, Marielle P, Associate Professor
Health & Kinesiology
PHD, Maastricht University, Netherlands, 2000

Fehr, Sara K, Clinical Assistant Professor
Health & Kinesiology
PHD, University of Cincinnati, 2015

Fluckey, James D, Professor
Health & Kinesiology
PHD, The Pennsylvania State University, 1995

Garney, Whitney R, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2015

Gilreath, Tamika D, Associate Professor
Health & Kinesiology
PHD, The Pennsylvania State University, 2007

Goodson, Patricia, Professor
Health & Kinesiology
PHD, University of Texas, 1996

Green, John S, Clinical Professor
Health & Kinesiology
PHD, Texas A&M University, 1996

Green, Lisa L, Adjunct Assistant Professor
Health & Kinesiology
PHD, Texas Women's University, 2001

Greenwood, C Michael, Clinical Professor
Health & Kinesiology
PHD, Texas Woman's University, 1990

Greenwood, Lori, Clinical Professor
Health & Kinesiology
PHD, Oregon State University, 1995

Guinn III, James R, Instructional Assistant Professor
Health & Kinesiology
EDD, Abilene Christian University, 2017

Hanik, Bruce W, Instructional Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2011

Harvey, Idethia S, Associate Professor
Health & Kinesiology
DrPH, University of Pittsburgh, 2005

Hudson, Shane L, Clinical Professor
Health & Kinesiology
PHD, Texas A&M University, 2007

Kalbasi, Shaída, Instructional Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2015

Keiper, Paul, Clinical Associate Professor
Health & Kinesiology
EDD, Texas A&M University, 2002

Kennedy, Deanna M, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2015

Kreider, Richard, Professor
Health & Kinesiology
PHD, University of Southern Mississippi, 1987

Lawler, John, Professor
Health & Kinesiology
PHD, University of Florida, 1991

Lee, Hyun Woo, Assistant Professor
Health & Kinesiology
PHD, Florida State University, 2014

Lemke, Michael K, Clinical Assistant Professor
Health & Kinesiology
PHD, Wichita State University, 2013

Lightfoot, John, Professor
Health & Kinesiology
PHD, University of Tennessee, 1986

Liu, Jiling, Instructional Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2016

Martin, Steven E, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2008

Masset, Michael P, Associate Professor
Health & Kinesiology
PHD, University of Illinois at Urbana-Champaign, 1997

McNeill, Elisa H, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2010

Milstein, Sloane H, Clinical Assistant Professor
Health & Kinesiology
EDD, Southern Connecticut State University, 2013

Moore, Melinda S, Professor
Health & Kinesiology
PHD, Ball State University, 1997

Nicksic, Hildi M, Clinical Assistant Professor
Health & Kinesiology
PHD, The University of Texas, 2015

Patterson, Megan Stiefel, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2016

Pittman, Andrew T, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 1991

Rahn, Rhonda N, Clinical Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2014

Riechman, Steven E, Associate Professor
Health & Kinesiology
PHD, University of Pittsburgh, 2000

Sandlin, Michael E, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 1992

Schoessow, Courtney J, Instructional Assistant Professor
Health & Kinesiology
PHD, Medical University of South Carolina, 2014

Sherman, Ledric D, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2013

Shipley, Meagan M, Clinical Assistant Professor
Health & Kinesiology
PHD, Indiana University, 2014

Singer, John N, Associate Professor
Health & Kinesiology
PHD, Ohio State University, 2002

Strong, Michelle R, Instructional Assistant Professor
Health & Kinesiology
MFA, Case Western Reserve University, 2011

Templin, Mai Phuong L, Instructional Assistant Professor
Health & Kinesiology
MAR, University of Houston, 1992

Ten Have, Gabriella A, Research Assistant Professor
Health & Kinesiology
PHD, Maastricht University, 2017

Thomas, Francis E, Instructional Professor
Health & Kinesiology
PHD, Texas A&M University, 1980

Thornton, John H, Executive Professor
Health & Kinesiology
PHD, Texas A&M University, 1997

Thornton, Michael A, Clinical Assistant Professor
Health & Kinesiology
EDD, Texas A&M University, 2007

Tisone, Christine, Clinical Assistant Professor
Health & Kinesiology
PHD, Indiana University, 2004

Walker, Dillon K, Research Assistant Professor
Health & Kinesiology
PHD, Kansas State University, 2008

Walker, Matthew B, Associate Professor
Health & Kinesiology
PHD, Florida State University, 2007

Waltemyer, David S, Clinical Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2006

Wigfall, Lisa T, Assistant Professor
Health & Kinesiology
PHD, University of South Carolina, 2009

Wilson, Kelly L, Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2004

Woodman, Christopher R, Associate Professor
Health & Kinesiology
PHD, University of Arizona, 1995

Wright, David L, Professor
Health & Kinesiology
PHD, Pennsylvania State University, 1989

Xiang, Ping, Professor
Health & Kinesiology
PHD, Louisiana State University, 1996

Zhao, Shixi, Visiting Lecturer
Health & Kinesiology
PHD, Texas A&M University, 2018

Masters

- Master of Science in Athletic Training (p. 633)
- Master of Science in Health Education (p. 637)
- Master of Science in Kinesiology (p. 648)
- Master of Science in Sport Management (p. 658)

Doctoral

- Doctor of Philosophy in Health Education (p. 642)
- Doctor of Philosophy in Kinesiology (p. 652)

Master of Science in Athletic Training

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- | | | |
|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|

| | | | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, contact the TAMU University Bookstore. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website http://ogsdpps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 634)
- Degree Plan (p. 635)
- Credit Requirements (p. 635)
- Transfer of Credit (p. 635)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 635)
- Thesis Option (p. 636)
 - Thesis Proposal (p. 636)
 - Final Examination/Thesis Defense (p. 636)
- Non-Thesis Option (p. 637)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **two members of the Master of Science in Athletic Training graduate faculty**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty

member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 60 hours of approved courses and research is required for the thesis option Master of Science in Athletic Training.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess

of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.

- Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal

deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement

provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 637)
- Continuous Registration (p. 637)
- Time Limit (p. 637)
- Foreign Languages (p. 637)
- Application for Degree (p. 637)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Health Education

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 638)
- Degree Plan (p. 639)
- Credit Requirements (p. 639)
- Transfer of Credit (p. 639)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 639)
- Thesis Option (p. 640)
 - Thesis Proposal (p. 640)
 - Final Examination/Thesis Defense (p. 640)
- Non-Thesis Option (p. 641)

Student's Advisory Committee

On-Campus Degree Program

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve.

Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Distance Education Degree Program

The distance education modality requires an advisory committee to be comprised of a two person committee, a chair and one inside committee person.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework in which **no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all**

courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 641)
- Continuous Registration (p. 642)
- Time Limit (p. 642)
- Foreign Languages (p. 642)
- Application for Degree (p. 642)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Health Education

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S.

DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

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| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 643)
- Degree Plan (p. 643)
- Transfer of Credit (p. 644)
- Research Proposal (p. 644)
- Examinations (p. 644)
 - Preliminary Examination (p. 644)
 - Preliminary Examination Format (p. 644)
 - Preliminary Examination Scheduling (p. 645)

- Report of Preliminary Examination (p. 645)
- Retake of Failed Preliminary Examination (p. 645)
- Final Examination (p. 646)
- Report of Final Examination (p. 646)
- Dissertation (p. 646)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.

- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 646)
- Time Limit (p. 647)
- Continuous Registration (p. 647)
- Admission to Candidacy (p. 647)
- Languages (p. 647)
- 99-Hour Cap on Doctoral Degree (p. 647)
- Application for Degree (p. 648)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Kinesiology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

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| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
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| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 648)
- Degree Plan (p. 649)
- Credit Requirements (p. 649)
- Transfer of Credit (p. 649)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 650)
- Thesis Option (p. 650)
 - Thesis Proposal (p. 650)
 - Final Examination/Thesis Defense (p. 650)
- Non-Thesis Option (p. 651)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 651)
- Continuous Registration (p. 651)
- Time Limit (p. 652)
- Foreign Languages (p. 652)
- Application for Degree (p. 652)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Kinesiology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 653)
- Degree Plan (p. 653)
- Transfer of Credit (p. 654)
- Research Proposal (p. 654)
- Examinations (p. 654)
 - Preliminary Examination (p. 654)
 - Preliminary Examination Format (p. 654)
 - Preliminary Examination Scheduling (p. 655)
 - Report of Preliminary Examination (p. 655)
 - Retake of Failed Preliminary Examination (p. 655)
 - Final Examination (p. 655)
 - Report of Final Examination (p. 656)
- Dissertation (p. 656)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 656)
- Time Limit (p. 657)
- Continuous Registration (p. 657)
- Admission to Candidacy (p. 657)
- Languages (p. 657)
- 99-Hour Cap on Doctoral Degree (p. 657)
- Application for Degree (p. 658)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Sport Management

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 658)
- Degree Plan (p. 659)
- Credit Requirements (p. 659)
- Transfer of Credit (p. 659)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 660)
- Thesis Option (p. 660)
 - Thesis Proposal (p. 660)
 - Final Examination/Thesis Defense (p. 661)
- Non-Thesis Option (p. 661)

Student's Advisory Committee

On-Campus Degree Program

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major

or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Distance Education Degree Program

The distance education modality requires an advisory committee to be comprised of a two person committee, a chair and one inside committee person.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from

the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.

9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate

and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different

committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 661)
- Continuous Registration (p. 662)
- Time Limit (p. 662)
- Foreign Languages (p. 662)
- Application for Degree (p. 662)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Teaching, Learning and Culture

<http://tlac.tamu.edu>

Head: Dr. Michael de Miranda

Associate Department Head for Graduate Studies: Dr. Patrick Slattery

Graduate Advisors: Ambyr Rios; Kara Bond; Christina Presley

The Department of Teaching, Learning and Culture offers two degrees at the master’s level: the Master of Science (MS) in Curriculum and Instruction (thesis) and the Master of Education (MEd) in Curriculum and Instruction (non-thesis). There are two delivery options for students seeking the MEd degree: on-campus or online. The online MEd has four areas of emphasis: Generalist, Reading (with Reading Specialist certification), STEM, and Urban Education. The on-campus MEd and MS offer areas of emphasis in English as a Second Language, Mathematics Education, Science Education, Reading and Literacy, and Multicultural Education.

The Department of Teaching, Learning and Culture offers the Doctor of Philosophy (PhD) in Curriculum and Instruction. The program requires a minimum of 64 semester credit hours beyond the master’s degree. This program is offered to those with an interest in the philosophical, theoretical and methodological constructs of both applied and basic quantitative and qualitative research. The acquisition of knowledge evolves from conceptualizing the procedures of educational inquiry as they relate to both the consumer and the practitioner. Specializations within this research-based curriculum are designed to encompass the original independent research interests of the individual. Areas of emphasis include English as a Second Language, Multicultural Education, Mathematics Education, Literacy Education, Science Education, Technology & Teacher Education, and Urban Education.

The Department of Teaching, Learning and Culture also offers an Online Doctor of Education (EdD) in Curriculum and Instruction, specializing in Educational Leadership. The program requires a minimum of 64 semester credit hours beyond the master’s degree, all of which are presented through a web-based delivery system. Students admitted to this program progress only as members of a cohort. Applicants to this program must have completed a master’s degree and must have five years of classroom teaching experience.

The admission deadlines for the Master of Science (MS) degree and Master of Education (MEd) degree are listed below.

| | |
|------------------|-----------|
| Summer Admission | March 1 |
| Fall Admission | March 1 |
| Spring Admission | October 1 |

Admission to the Doctor of Philosophy (PhD) degree program is once a year and requires an interview.

| | |
|------------------------------------------|------------|
| Fall Admission: International Applicants | October 1 |
| Fall Admission: Domestic Applicants | December 1 |

Admission to the Online Doctor of Education (EdD) degree program is once a year and requires an interview.

Spring Cohort Admission

August 1

The Department of Teaching, Learning and Culture also offers a graduate-level post-baccalaureate certification program for individuals who have completed a bachelor's degree and desire initial certification at the elementary, middle grade and secondary level. The certification program requires the completion of twenty-one (21) graduate semester credit hours and the successful completion of the appropriate State certification examinations. Program participants will serve a full public school year internship either in a salaried or non-salaried position. Participants may apply the graduate certification coursework toward the Master of Education (MEd) degree in Curriculum and Instruction. The admission deadlines for the post-baccalaureate certification program are as follows: March 1st for fall admission; October 1st for spring admission; December 1st for summer admission.

The Department of Teaching, Learning and Culture also offers programs at the graduate level that lead to endorsements or certifications in the following areas: Master Reading Teacher and Reading Specialist. Online MEd students can also earn the STEM certificate. PhD students may seek an Advanced Research Methods Certificate.

For additional information on the programs offered by the Department of Teaching, Learning and Culture, or for more information on the application process and admission deadlines, contact the Department of Teaching, Learning and Culture by telephone at 979-862-8032, or visit the department on the website at <http://tlac.tamu.edu>.

Faculty

Ashley, Candice R, Lecturer
Teaching, Learning & Culture
PHD, Capella University, 2014

Barrett, Julie, Lecturer
Teaching, Learning & Culture
EDD, Sam Houston State University, 2013

Burghardt, Beatrix, Visiting Assistant Professor
Teaching, Learning & Culture
PHD, Indiana University, 2015

Burlbaw, Lynn M, Professor
Teaching, Learning & Culture
PHD, University of Texas, 1989

Butterfield, Vernee, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2018

Cantrell, Emily S, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2008

Capraro, Mary M, Professor
Teaching, Learning & Culture
PHD, University of Southern Mississippi, 2000

Capraro, Robert M, Professor
Teaching, Learning & Culture
PHD, University of Southern Mississippi, 2000

Cassell, Edith C, Clinical Associate Professor
Teaching, Learning & Culture
PHD, Purdue University, 2007

Clark, Robert M, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2010

Clough, Michael P, Professor
Teaching, Learning & Culture
PHD, The University of Iowa, 1994

Craig, Cheryl J, Professor
Teaching, Learning & Culture
PHD, University of Alberta, Canada, 1992

Davis, Trina J, Associate Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2005

De Miranda, Michael A, Professor and Head
Teaching, Learning & Culture
PHD, University of California, 1996

Dixon, Laurie Q, Associate Professor
Teaching, Learning & Culture
PHD, Harvard University Graduate School of Education, 2004

Etchells, Matthew, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2018

Fields, Susan S, Visiting Assistant Professor
Teaching, Learning & Culture
EDD, Boston University, 2017

Fleming, Kenneth J, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2016

Foran, Alexandra, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2018

Griffith, Karee, Lecturer
Teaching, Learning & Culture
PHD, University of Mary Hardin-Baylor, 1993

Hammer, Janet E, Clinical Professor
Teaching, Learning & Culture
PHD, University of Texas, 2003

Hill-Jackson, Valerie L, Clinical Professor
Teaching, Learning & Culture
PHD, St. Joseph's University, 2003

Howe, Roger, Professor
Teaching, Learning & Culture
PHD, University of California, Berkeley, 1969

Hutchins, Shaun D, Lecturer
Teaching, Learning & Culture
PHD, Colorado State University, 2015

James, Marlon C, Assistant Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2008

Joshi, R M, Professor
Teaching, Learning & Culture
PHD, University of South Carolina, 1976

Kelly, Larry J, Clinical Professor
Teaching, Learning & Culture
PHD, The University of Texas - Austin, 2002

Killough, Joy Kathleen, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2018

Koh, Poh Wee, Assistant Professor
Teaching, Learning & Culture
PHD, University of Toronto, 2016

Kuo, Li-Jen, Associate Professor
Teaching, Learning & Culture
PHD, University of Illinois at Urbana - Champaign, 2006

Kwok, Andrew, Assistant Professor
Teaching, Learning & Culture
PHD, University of Michigan, 2016

Kwok, Michelle, Lecturer
Teaching, Learning & Culture
PHD, University of Michigan, 2016

Laub, James D, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, Prairie View A&M University, 2007

Li, Yeping, Professor
Teaching, Learning & Culture
PHD, University of Pittsburgh, 1999

Marshall, Robert, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 1995

Matthews, Sharon D, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, New Mexico State University, 2007

McKeown, Debra, Associate Professor
Teaching, Learning & Culture
PHD, Vanderbilt University, 2012

Middlebrooks, Mary W, Lecturer
Teaching, Learning & Culture
PHD, Sam Houston State University, 1973

Neshyba, Monica V, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, University of Texas - Austin, 2012

Ogletree, Quinita D, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2012

Olson, Joanne K, Professor
Teaching, Learning & Culture
PHD, University of Southern California, 1999

Parker, Dawn R, Clinical Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 1997

Rackley, Robin A, Clinical Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2004

Raven, Sara P, Assistant Professor
Teaching, Learning & Culture
PHD, University of Georgia, 2013

Rector, Amy S, Visiting Assistant Professor
Teaching, Learning & Culture
EDD, University of Cincinnati, 2017

Rupley, William H, Professor
Teaching, Learning & Culture
PHD, University of Illinois at Urbana-Champaign, 1975

Shimek, Christina M, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2012

Simpson, Claudine L, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2005

Singleton, Julie A, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2011

Slattery Jr, George P, Professor
Teaching, Learning & Culture
PHD, Louisiana State University, 1989

Stewart, Paul B, Lecturer
Teaching, Learning & Culture
PHD, University of Southern California, 2003

Stillisano, Jacqueline G, Lecturer
Teaching, Learning & Culture
EDD, Ball State University, 2004

Viruru, Radhika, Clinical Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 1998

Von Gillern, Sam R, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, Iowa State University, 2017

Waxman, Hersholt C, Professor
Teaching, Learning & Culture
PHD, University of Illinois at Chicago, 1982

Wijekumar, Kausalai, Professor
Teaching, Learning & Culture
PHD, The Pennsylvania State University, 2000

Williams, Kamala V, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2010

Yalvac, Bugrahan, Associate Professor
Teaching, Learning & Culture
PHD, Pennsylvania State University, 2005

Masters

- Master of Education in Curriculum and Instruction (p. 670)
- Master of Science in Curriculum and Instruction (p. 673)

Doctoral

- Doctor of Education in Curriculum and Instruction (p. 665)
- Doctor of Philosophy in Curriculum and Instruction (p. 676)

Certificates

- Science, Technology, Engineering and Mathematics (STEM) Education Certificate (p. 682)

Doctor of Education in Curriculum and Instruction

The Department of Teaching, Learning and Culture offers an online Doctor of Education (EdD) in Curriculum and Instruction. The program requires a minimum of 64 semester credit hours beyond the master's degree, all of which are presented through a web-based delivery platform. Students admitted to this program progress only as members of a cohort. All applicants must hold a master's degree and have completed at least five years of classroom teaching experience.

The **Doctor of Education (EdD)** degree is a professional degree designed to prepare a candidate for a position of leadership in the full range of educational settings, including public and private schools and colleges, business, government, industry and the military establishment. The program is designed for the practitioner; a graduate may be expected to fill instructional, supervisory and administrative positions in which educational services are to be rendered.

Although substantively different from the PhD degree in education, the EdD degree requires equivalent admission qualifications, standards of scholarship and breadth and depth of study. Because graduates of the program are expected to demonstrate a high level of professional skill and educational statesmanship, only those candidates who show a consistently high level of professional performance in their academic studies, in their role-related studies, in their internship experience, and in the completion of their records of study will be recommended for the degree. The EdD degree may be earned in agricultural education, educational administration, and curriculum and instruction. Details of the requirements are presented below.

Admission

An applicant must hold the master's degree, provide an academic record acceptable to the department, and may be required to submit scores for the Graduate Record Examination. The requirement for years of professional experience in an educationally related setting varies by program. Please see program admissions information related to this prerequisite. He/she also must complete a written instrument which assesses the knowledge of the requirements and duties of the

professional roles to which he/she aspire and demonstrates his/her ability to write with clarity, organization and correctness.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 665)
- Degree Plan (p. 666)
- Transfer of Credit (p. 666)
- Examinations (p. 667)
 - Preliminary Examination (p. 667)
 - Preliminary Examination Format (p. 667)
 - Preliminary Examination Scheduling (p. 667)
 - Report of Preliminary Examination (p. 667)
 - Retake of Failed Preliminary Examination (p. 668)
 - Final Examination (p. 668)
 - Report of Final Examination (p. 668)
- Record of Study (p. 668)

Student's Advisory Committee

On-campus Degree Program

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members

may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Distance education degree program

The distance education modality requires an advisory committee to be comprised by the designated coordinator of the distance education in the Department of Teaching, Learning and Culture and the Department Head of the Department of Teaching, Learning and Culture.

Degree Plan

On-campus degree program

Each student's proposed degree plan will be individually designed on the basis of the student's career objectives and the competencies associated with the professional role to which the student aspires. It will contain a minimum of 64 semester hours, including the following components:

1. At least 6 semester hours of proseminars stressing the foundation concepts with which every EdD student should be familiar;
2. A set of courses selected to prepare the candidate for a specific professional role within a field of specialization;
3. One or more courses that develop basic understanding of the procedures and applications of research;
4. At least one supporting field of 12 or more semester hours or two supporting fields of 9 or more semester hours each;
5. A professional internship of at least 6 semester hours related to the professional role to which the student aspires;
6. A record of study involving at least 12 semester hours of credit.

No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the preliminary examination.

Distance education degree program

Degree plans for the distance education program must include the following components:

1. At least 6 semester hours of pro-seminars stressing the foundation concepts with which every EdD student should be familiar

2. A set of courses selected to develop understanding of the processes of educational leadership;

3. At least 12 semester hours of courses that develop basic understanding of the procedures and applications of research

4. A set of courses selected to develop understanding of the application of theoretical knowledge to educational settings.

5. Two professional internships of at least 3 semester hours each related to the professional role to which the student aspires;

6. A record of study involving at least 12 semester hours of credit

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

On-campus program

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved joint degree programs with other Texas A&M University System institutions, credit for theses or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable **coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Distance education program

The distance education modality does not allow transfer of credit.

Research Proposal

On-campus and distance education programs

The general field of research to be used for the Record of Study should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

On campus and distance education program

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam will consist of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result

is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members

of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,

2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,

3. passed the preliminary examination,

4. submitted an approved dissertation proposal,

5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Record of Study

On-campus and distance education programs

The EdD student will produce a major research document called a record of study. The research project may involve such topics as

1. a field study on a problem of major proportions in time or extent;
2. a curriculum development project validated through pilot and field testing; or
3. action research on a curricular, instructional, supervisory or administrative problem based on empirical data.

The EdD student must have primary responsibility for the design and development of the research, and the record of study must be the sole and original work of the candidate.

Whatever the nature of the research project undertaken by the candidate, he or she will be required to prepare a record of study that explains and supports the activities undertaken in the project and supports its conclusions with adequate investigations, empirical data and a comprehensive bibliography. Procedures used in the student's research will be described in sufficient detail for educators in other locations to apply or extend the procedures. All records of study should be characterized by accuracy of observation and measurements, thoroughness of analysis and synthesis, and accuracy and completeness of presentation.

Guidelines for the preparation of the record of study are available in the *Thesis Manual* which is available online at <http://ogaps.tamu.edu>. After successful defense and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her record of study in electronic format as a single PDF file. The PDF file must be uploaded to the website <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A record of study that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 669)
- Continuous Registration (p. 669)
- Internship or Practicum (p. 669)
- 99-Hour Cap on Doctoral Degrees (p. 670)
- Application for Degree (p. 670)

Residence

On-campus programs

The residence requirement for the EdD degree is 30 semester credit hours in resident study at Texas A&M University. Of these 30 semester hours, at least 18 must be taken as a full-time student. The residence requirement must be fulfilled within five consecutive calendar years. This requirement may be satisfied by a student who presents any combination of full-time study during summer sessions of at least five weeks duration and/or work as a full-time student during regular sessions which totals in

the aggregate at least 18 semester hours, accomplished within a five-year period beginning with the first course proposed to apply to this requirement.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Distance education programs

There is no residency requirement for the distance education program.

Continuous Registration

A student in a program leading to the EdD who has completed all coursework on his/her degree plan other than 692 (Professional Study) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Internship or Practicum

On-campus programs

Each EdD degree candidate will complete a university-directed internship in a professional employment setting with a minimum duration of 300 clock hours accrued at the rate of 10–40 hours per week. The internship will require of the student full participation and responsibility in experiences directly related to the student's career specialization. Credit for the internship will not be given for a continuation of regular employment activities (e.g., continuing to serve as a junior college teacher or as an elementary school principal), but only for completing an entirely new work experience. The internship may be on a paid or unpaid basis, must be undertaken after the student has a degree plan on file, and must be supported by prior or concurrent coursework (usually toward the end of the degree program). Prior to its beginning, the internship must be approved in writing as to details by all members of the student's doctoral committee. At the conclusion of the internship, a formal written summary of its nature and results must be approved by the student's advisory committee.

Distance education programs

Each EdD degree candidate will complete two university-directed internships in a professional employment setting with a minimum duration of 150 clock hours each, accrued at the rate of 10–40 hours per week. Credit for the internship will not be given for a continuation of regular employment activities (e.g., continuing to serve as a junior college teacher or as an elementary school principal), but only for completing an entirely new work experience. The internship may be on a paid or unpaid basis, must be undertaken after the student has a degree plan on file, and must be supported by prior or concurrent coursework (usually toward the end of the degree program). Prior to its beginning, the internship must be approved in writing as to details by all members of the student's doctoral committee.

The **first 150-hour internship** focuses on leadership in curriculum and instruction and is coordinated with a three-hour course also focusing on leadership development. This internship provides an opportunity for candidates to integrate theory, context, and practice in which the candidate gains first hand experiences and deeper understandings about

the important role educational leaders play in creating and sustaining high quality learning environments.

The **second 150-hour internship** is aligned with the problem reframing process. Review by the Institutional Review Board (IRB) is necessary for this internship, as the internship engages Ed.D. students in the collection and analysis of information from the context for the Record of Study (ROS). The second internship is guided at the university level by the university internship director. The student's thematic chair and field-based mentor advise the student as he/she collects information to complete the ROS proposal.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

On-campus and distance education programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Education in Curriculum and Instruction

A graduate student majoring in agricultural leadership, education and communication; bilingual education; educational administration; educational curriculum and instruction; educational psychology; educational technology; or special education may become a candidate for the degree of **Master of Education (MEd)**. This is a non-thesis degree which requires a minimum of 36 hours of coursework and a satisfactory comprehensive final examination.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 670)

Degree Plan (p. 671)

Credit Requirement (p. 671)

Transfer of Credit (p. 671)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 671)

Final Examination (p. 672)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **only the chair**. The chair of the advisory committee must be from the student's department.

Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional

paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee chair include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee chair is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from the Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 semester credit hours of approved courses is required for the Master of Education degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater might be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685 or 690 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's

own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-campus program

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F, or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

A Master of Education student in the Department of Educational Psychology or a student majoring in Curriculum and Instruction is eligible to petition for an exemption from the final examination with departmental and committee approval. The petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. See the Office of Graduate and Professional Studies website <http://ogaps.tamu.edu>.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Distance Education Program

Online students taking the capstone course, EDCI 634, in their final semester of study are exempt from the final examination requirements. This reflective inquiry course capstones students' experiences throughout their graduate program and was approved to replace the traditional end-of-degree program examination.

Additional Requirements

Additional Requirements

- Residence (p. 672)
- Time Limit (p. 672)
- Foreign Languages (p. 672)
- Internship or Practicum (p. 672)
- Application for Degree (p. 673)

Residence

On-campus Program

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Education degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance education programs

There is no residency requirement for the distance education program.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Education degree.

Internship or Practicum

On-Campus Degree Programs

A student who undertakes a professional internship in partial fulfillment of master's degree requirements after completing all course requirements for the master's degree must return to the campus for the final examination. The final examination is not to be administered until all

other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Curriculum and Instruction

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 673)
- Degree Plan (p. 674)
- Credit Requirements (p. 674)
- Transfer of Credit (p. 674)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 674)
- Thesis Option (p. 675)
 - Thesis Proposal (p. 675)
 - Final Examination/Thesis Defense (p. 675)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no**

fewer than three members of the graduate faculty, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines

for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to

published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 676)
- Continuous Registration (p. 676)
- Time Limit (p. 676)
- Foreign Languages (p. 676)
- Application for Degree (p. 676)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Curriculum and Instruction

The Department of Teaching, Learning and Culture offers the Doctor of Philosophy (PhD) in Curriculum and Instruction. The program requires a minimum of 64 semester credit hours beyond the master's degree. This program is offered to those with an interest in the philosophical, theoretical and methodological constructs of both applied and basic quantitative and qualitative research. The acquisition of knowledge

evolves from conceptualizing the procedures of educational inquiry as they relate to both the consumer and the practitioner. Specializations within this research-based curriculum are designed to encompass the original independent research interests of the individual. They include Literacy Education, English as a Second Language, Multicultural Education, Urban Education, Mathematics Education, Science Education, and Technology and Teacher Education.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 678)
- Degree Plan (p. 678)
- Transfer of Credit (p. 679)
- Research Proposal (p. 679)
- Examinations (p. 679)
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 - Preliminary Examination Format (p. 679)
 - Preliminary Examination Scheduling (p. 680)
 - Report of Preliminary Examination (p. 680)
 - Retake of Failed Preliminary Examination (p. 680)
 - Final Examination (p. 680)
 - Report of Final Examination (p. 681)
- Dissertation (p. 681)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 681)
- Time Limit (p. 682)
- Continuous Registration (p. 682)
- Admission to Candidacy (p. 682)
- Languages (p. 682)
- 99-Hour Cap on Doctoral Degree (p. 682)
- Application for Degree (p. 682)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Science, Technology, Engineering and Mathematics (STEM) Education - Certificate

The Department of Teaching, Learning and Culture offers a Science, Technology, Engineering and Mathematics (STEM) Education Certificate.

Program Requirements

The STEM Education Certificate is a graduate-level 12-hour certificate program offered by the Department of Teaching, Learning and Culture in the College of Education and Human Development. It is designed for K-12 science, technology, engineering, and mathematics (STEM) teacher-practitioners. Individuals completing the certificate will gain knowledge and skills in designing learning experiences integrating STEM content and pedagogy: elements of engineering design, mathematics (algebra)

for engineering, research on teaching and learning (including cyber learning) from the learning sciences, and STEM-appropriate integrative pedagogical approaches (problem-based and inquiry learning).

Admission and program information is available on the department's website (<http://tlac.tamu.edu>).

| Code | Title | Semester Credit Hours |
|-----------------------------|--------------------------------------------------------------------------------------|-----------------------|
| EDCI 720 | Engineering Design for School Teaching and Learning | 3 |
| EDCI 620 | Science, Technology, Engineering and Mathematics (STEM) Teaching and Learning | 3 |
| EDCI 721 | How People Learn STEM | 3 |
| EDCI 723 | Developing Students' Disciplinary Language and Reading in STEM Teaching and Learning | 3 |
| Total Semester Credit Hours | | 12 |

College of Engineering

<http://engineering.tamu.edu>

Administrative Officers

Vice Chancellor and Dean of Engineering - M. Katherine Banks, Ph.D.

Executive Associate Dean - Nagamangala K. Anand, Ph.D.

Senior Associate Dean for Academic Affairs - Valerie E. Taylor, Ph.D.

Associate Dean for Academic Affairs - Prasad Enjeti, Ph.D.

Associate Dean for Academic Affairs - John E. Hurtado, Ph.D.

Senior Associate Dean for Research - Dimitris Lagoudas, Ph.D.

Associate Dean for Research - Narasimha Reddy, Ph.D.

Assistant Dean for Finance - Michelle Mitchell, B.B.A.

Departments

Departments

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- Master of Engineering in Systems Engineering (p. 699)
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- Master of Science in Safety Engineering (p. 702)

Doctoral

- Doctor of Engineering in Engineering (p. 683)
- Doctor of Philosophy in Interdisciplinary Engineering (p. 693)

Certificates

- Cybersecurity Engineering Certificate (p. 706)
- Engineering Concept, Creation, and Commercialization Certificate (p. 707)
- Engineering Project Management Certificate (p. 707)
- Safety Engineering Certificate (p. 707)

Doctor of Engineering in Engineering

The **Doctor of Engineering (DEng)** program has as its objective the education of men and women to function at the highest levels of the engineering profession, with emphasis on solving problems which arise in the use of technology to benefit society at large. Since these problems frequently have a societal impact which is non-technical in nature and since technological advances are implemented through business and industry, the Doctor of Engineering program seeks to couple understanding of the characteristics of social and business institutions with high competence in solving engineering problems.

The curriculum is a 96 semester credit hour professional program beyond the baccalaureate degree. A minimum of 64 credit hours beyond the master's degree is required. These totals include a maximum of 16 credit hours for a professional internship.

Following entry into the Doctor of Engineering program, the student will complete a minimal 36-semester-credit-hour course of study prior to a one calendar year (4 credit hours per semester) internship

in which the student will extend his or her education in a practice-oriented environment such as an industrial organization. The Doctor of Engineering program is administered by the College of Engineering with the Office of Graduate and Professional Studies.

The final oral/written examination for the Doctor of Engineering degree is administered by the student's advisory committee, as approved by the College of Engineering and the Office of Graduate and Professional Studies. Additional information can be obtained from the Associate Dean for Graduate Programs and/or the Director of Interdisciplinary Engineering Programs in the College of Engineering.

Admission

Prior to applying to the Doctor of Engineering program, an individual must first be admitted by a graduate program within the College of Engineering. An individual possessing a minimum of an ABET-accredited bachelor's degree in engineering or the equivalent may apply for program admission. A person applying with only a bachelor's degree must have a graduate point average of at least 3.00/4.00. An individual applying with a master's degree in engineering must have a grade point average of at least 3.25 for his/her overall graduate studies. To be admitted to the Doctor of Engineering program by the College of Engineering, an applicant must complete the appropriate application form, provide transcripts of all academic work taken beyond the secondary school level, prepare a 300-word essay dealing with the applicant's motivation for seeking admission to the program, be recommended by his/her respective department, be interviewed by the admissions subcommittee of the Doctor of Engineering program committee, and be approved by the College of Engineering. A student is required to pass the oral and written examinations associated with the Doctor of Engineering qualifying examination described in "Examinations."

Program Requirements

Program Requirements

Student's Advisory Committee (p. 684)

Degree Plan (p. 684)

Transfer of Credit (p. 684)

Final Examination (p. 685)

Record of Study (p. 685)

Student's Advisory Committee

After receiving admission to the Doctor of Engineering program, the student will consult with the head of his or her administrative department concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of not fewer than four members of the graduate faculty representative of the student's several fields of study. One member of the committee must have an appointment to a department other than the student's administrative department.

The student's internship supervisor, a practicing engineer, also is a member of the advisory committee. The chair, in consultation with the student will select the remainder of the advisory committee. The chair will notify the tentative members of the advisory committee, giving the student's name and field of study, requesting that they consider serving on the advisory committee. The student will interview each prospective committee member to determine whether he or she will accept the assignment.

The student's advisory committee has the responsibility for guiding and directing the entire academic and internship programs of the student and

for initiating all actions concerning the student. The chair of the advisory committee, who usually has immediate supervision of the student's program, has the responsibility for calling required meetings of the advisory committee and calling meetings at any other time considered desirable.

The duties of the advisory committee include responsibility for the proposed degree program, the Doctor of Engineering qualifying examination (written and oral), the technical adequacy of the internship program, the qualifications of the student to embark on the internship, the internship report, and the final examination. In addition, the advisory committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Dean of the College of Engineering and the Associate Provost for Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan which will constitute the basic academic requirements for the degree. The degree plan must be filed with the Office of Graduate and Professional Studies following the deadline imposed by the student's college, and no later than 90 days prior to the preliminary examination. The degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpss.tamu.edu>.

The graduate portion of the proposed degree plan will include a minimum of 96 semester credit hours. Of these, 80 semester credit hours of coursework are required; the Professional Internship (see section on "Internship") will earn 4 semester credit hours per semester and per summer term.

The 80 semester credit hours of graduate coursework shall include a minimum of 20 semester credit hours of required core coursework, 12 semester credit hours of elective professional development courses, 32 semester credit hours of department-oriented graduate level courses, 12 semester credit hours of engineering design courses and 4 semester credit hours of professional development seminar.

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if such additional coursework is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved joint degree programs with other Texas A&M University System institutions, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Final Examination

A student admitted to the program is required to pass a comprehensive written and oral examination called the Doctor of Engineering Qualifying Examination. It will be administered when semester credit hours equivalent to the number required for a Master of Engineering degree have been accumulated. An individual holding a master’s degree when he/she enters the Doctor of Engineering program will be expected to take the Doctor of Engineering Qualifying Examination during his/her first semester of enrollment. The examination determines whether or not the student is prepared to continue study toward the Doctor of Engineering degree. A student who fails the Qualifying Examination may, with the approval of the advisory committee, retake the examination once. The second examination will be administered after a suitable period of preparation, normally not less than six months, upon the recommendation of the advisory committee.

The student’s major department and advisory committee may require departmental, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee. For instance, these examinations may be used for determining the technical depth and breadth required for the internship project. The candidate for the degree of Doctor of Engineering must pass a final oral examination in the final semester following the internship. **The student is allowed only one opportunity to take the final examination.** This exam will include presentation of results of internship work. The student’s advisory committee, as finally constituted, will conduct this examination, which will include the internship experience and closely allied topics as well as the broad field of the candidate’s training. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the

major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. The advisory committee will submit its recommendations through the Dean of Engineering to the Office of Graduate and Professional Studies regarding the acceptability of the candidate for the doctoral degree.

If the chair of a student’s advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

Record of Study

A record of study, which usually is a report of the student’s internship experiences, must be prepared in accordance with guidelines issued by the Doctor of Engineering program committee. By deadlines announced each semester, the candidate must submit to the Office of the Dean of Engineering one copy of the record of study in final form. The suggestions and corrections of the members of the advisory committee must be incorporated, and the report must bear the signature of the department head and the members of the student’s advisory committee. The record of study must be the original work of the candidate. This record of study must also be approved by the Office of Graduate and Professional Studies as in the case of a PhD dissertation.

Guidelines for the preparation of the record of study are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu/>. After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the Intercollegiate Faculty, if appropriate), a student must submit his/her record of study in electronic format as a single PDF file. The PDF file must be uploaded to the website at <http://ogaps.tamu.edu/>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Except as noted in the sections above, the requirements for the Doctor of Engineering degree are identical to those for the Doctor of Philosophy.

Deadlines for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu/>.

Before a student can be “cleared” by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A record of study that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 686)
- Continuous Registration (p. 686)
- Scholarship (p. 686)
- Internship or Practicum (p. 686)
- 99-Hour Cap on Doctoral Degrees (p. 686)
- Application to Degree (p. 687)

Residence

A student who enters the DEng program with baccalaureate degrees must spend two academic years in resident study at Texas A&M University. A student who holds a master's degree when he/she enters the program must spend one academic year in resident study. In this context, an academic year is defined as two regular semesters, two 10-week summer semesters or a regular semester and a 10-week summer semester. To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Continuous Registration

A student in a program leading to a Doctor of Engineering who has completed all coursework on his/her degree plan other than 684 (Internship) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27). However, colleges or departments may have additional or higher requirements.

Scholarship

To remain in good standing, a student admitted to the Doctor of Engineering program must maintain a GPR of 3.250 during his/her graduate studies.

Internship or Practicum

As part of the degree requirements after completing courses on the approved degree plan (except ENGR 684), each student will spend a minimum of one calendar year working under the supervision of a practicing engineer in industry, business or government. The objectives of the internship are two-fold:

1. to enable the student to demonstrate the ability to apply both knowledge and technical education by making an identifiable contribution in an area of practical concern to the organization or industry in which the internship is served, and
2. to enable the student to function in a non-academic environment in a position in which he or she will become aware of the organizational approach to problems, in addition to those of traditional engineering design or analysis.

During the internship phase of the program, the student must be continuously enrolled in the University.

The nature of the internship experience will be determined by mutual consent among the student, the advisory committee and the supervising organization prior to commencement of the internship period. It is expected that the internship experience will be at a level in the organization which will enable the student to deal with broadly based problems affecting more than one facet of the organization, rather than a single narrow or specific technical problem. The student is responsible for identifying and arranging a suitable internship. Specific arrangements for the internship will be made through the student's major department, and an internship agreement must be negotiated between the student and the advisory committee, and the internship supervisor and appropriate representatives of the industrial organization. Copies of all agreements must be approved by the College of Engineering.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology

- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Engineering in Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 687)
- Degree Plan (p. 687)
- Credit Requirement (p. 687)
- Transfer of Credit (p. 688)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 688)
- Final Examination (p. 688)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants

the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for

either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu/>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of**

any cancellation. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 689)
- Time Limit (p. 689)
- Foreign Languages (p. 689)
- Internship or Practicum (p. 689)
- Application for Degree (p. 689)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Interdisciplinary Engineering

Please contact the Associate Dean for Graduate Programs and/or the Director of Interdisciplinary Engineering Programs in the College of Engineering for more information about this program.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 690)
- Degree Plan (p. 691)
- Credit Requirements (p. 691)
- Transfer of Credit (p. 691)
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Student's Advisory Committee

The Master of Science in Interdisciplinary Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination.

In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in two closely related fields; no more than 50% of the coursework should be from any single academic program. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from

the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types

of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/

she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Interdisciplinary Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. A non-thesis option student is not allowed to take more than 50% of his or her classes from a single academic program. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 693)
- Continuous Registration (p. 693)
- Time Limit (p. 693)
- Foreign Languages (p. 693)
- Application for Degree (p. 693)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Interdisciplinary Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
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| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 695) • Degree Plan (p. 695) • Transfer of Credit (p. 695) • Research Proposal (p. 696) • Examinations (p. 696) <ul style="list-style-type: none"> • Preliminary Examination (p. 696) • Preliminary Examination Format (p. 696) • Preliminary Examination Scheduling (p. 696) • Report of Preliminary Examination (p. 696) • Retake of Failed Preliminary Examination (p. 697) • Final Examination (p. 697) • Report of Final Examination (p. 697) • Dissertation (p. 697) | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- All English language proficiency requirements are satisfied.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and

Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 698)
- Time Limit (p. 698)
- Continuous Registration (p. 698)
- Admission to Candidacy (p. 698)
- Languages (p. 698)
- 99-Hour Cap on Doctoral Degree (p. 699)
- Application for Degree (p. 699)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-

than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691, 5V98 or 5V99 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 5V98 and 5V99, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Engineering in Systems Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

The Masters of Engineering in Systems Engineering provides students with the latest cross-disciplinary concepts, tools and skills in systems engineering. These skills are essential for the design, integration, operation, and maintenance of large-scale engineered systems in the government, military and civil industries.

The systems engineering discipline is focused on the successful realization of engineered systems. The scope of systems engineering spans the entire system lifecycle, from earliest conception through system retirement.

The Masters of Engineering in Systems Engineering program will prepare students for careers in all aspects of systems engineering while allowing them to tailor their academic program for depth in a particular industry or skill type.

Additional information can be obtained from the Associate Dean for Graduate Programs and/or the Director of Interdisciplinary Engineering Programs in the College of Engineering.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 699)
- Degree Plan (p. 700)
- Credit Requirement (p. 700)
- Transfer of Credit (p. 700)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 700)
- Final Examination (p. 701)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory

committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicates their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu/>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of**

any cancellation. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 701)
- Time Limit (p. 701)
- Foreign Languages (p. 701)
- Internship or Practicum (p. 702)
- Application for Degree (p. 702)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Safety Engineering

The Master of Science in Safety Engineering is administered by the Mary Kay O'Connor Process Safety Center (MKOPSC) at Texas A&M University. The objective of this program with thesis is to teach the principles and practices of safety engineering for leadership careers in industry. The prerequisite for the MS in Safety Engineering program is a Bachelor Degree in Engineering.

This MS in Safety Engineering is also offered via distance education with either the thesis and non-thesis option. This program includes extensive engineering applications with integration of safety principles, safety practices and case studies.

Admission is offered based on meeting admission requirements and the agreement of a faculty advisor, which can be from any engineering department. A degree plan is then approved in joint consultation between the faculty advisor and the Director of the Center.

<http://engineering.tamu.edu>

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 703)
- Degree Plan (p. 703)
- Credit Requirements (p. 703)
- Transfer of Credit (p. 704)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 704)
- Thesis Option (p. 704)
 - Thesis Proposal (p. 705)
 - Final Examination/Thesis Defense (p. 705)
- Non-Thesis Option (p. 705)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Science in Safety Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily

separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework in which **no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for

either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had

adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

Distance Education Degree Program

The Final Examination is not required for the non-thesis option Master of Science in Safety Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 706)
- Continuous Registration (p. 706)
- Time Limit (p. 706)
- Foreign Languages (p. 706)
- Application for Degree (p. 706)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Cybersecurity Engineering - Certificate

The College of Engineering offers a certificate in Cybersecurity.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|----------------------------------------------------------------|-----------------------|
| CYBR 601/ CSCE 701 | Foundations of Cybersecurity | 3 |
| | or CSCE 665 or Advanced Networking and Security | |
| ECEN 759/ CYBR 630 | Hardware Security | 3 |
| Select two of the following: | | 6 |
| CSCE 640 | Quantum Algorithms | |
| CSCE 652 | Software Reverse Engineering | |
| CSCE 665 | Advanced Networking and Security | |
| CSCE 678/ ECEN 757 | Distributed Systems and Cloud Computing | |
| CSCE 684 | Professional Internship ² | |
| CSCE 685 | Directed Studies ² | |
| CYBR 602/ CSCE 702 | Law and Policy in Cybersecurity | |
| CYBR 603/ CSCE 703 | Cybersecurity Risk | |
| CYBR 604/ CSCE 704 | Data Analytics for Cybersecurity | |
| CYBR 660/ INTA 690 | Cybersecurity Literacy for the Global Arena | |
| CYBR 661/ PSAA 608 | Cybersecurity Policy, Issues and Operations: A Manager's Guide | |
| CYBR 684 | Professional Internship ² | |
| CYBR 685 | Directed Studies ² | |
| ECEN 604 | Channel Coding for Communications Systems | |
| ECEN 647 | Information Theory | |
| ECEN 684 | Professional Internship ² | |
| ECEN 685 | Directed Studies ² | |
| ECEN 753 | Theory and Applications of Network Coding | |
| ECEN 758 | Data Mining and Analysis | |
| ECEN 759/ CYBR 630 | Hardware Security ¹ | |
| ISTM 635 | Business Information Security | |
| ISTM 645 | IT Security Controls | |
| ISTM 655 | Security Management and Compliance | |

MATH Information, Secrecy and
673/CSCE Authentication I
673

Total Semester Credit Hours 12

- ¹ Course can be taken as a cybersecurity directed elective only if it is not taken as part of cybersecurity core.
- ² Course must be approved by the program director for inclusion in the certificate and include applications in cybersecurity engineering. The maximum number of hours allowable in 684 and 685 courses combined is 3.

Students may substitute courses not listed here for the cybersecurity directed elective with the approval of the certificate program director.

Engineering Concept, Creation, and Commercialization - Certificate

The College of Engineering offers a certificate in Engineering Concept, Creation, and Commercialization.

Program Requirements

| Code | Title | Semester Credit Hours |
|---------------------------------------------|------------------------------------------------------------------|-----------------------|
| ENGR 661 | Product Lean Launch for Engineers | 3 |
| ENGR 662 | Engineering Entrepreneurship Hour | 1 |
| Select three of the following: ¹ | | 9 |
| BMEN 606 | Medical Device Path to Market | |
| BMEN 669 | Entrepreneurial Pathways in Medical Devices | |
| ENGR 611 | Enterprise Basics for Technical Entrepreneurs | |
| ENGR 612 | Sales, Operations, and Manufacturing for Technology Companies | |
| ENGR 621 | Technology Company Management, Leadership, and Corporate Culture | |
| MEEN 690 | Entrepreneurship in Nano and Energy Systems | |
| Total Semester Credit Hours | | 13 |

- ¹ Other courses may be approved as prescribed electives by the Certificate Program Director.

Engineering Project Management - Certificate

The College of Engineering offers a certificate in Engineering Project Management.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------|----------------------------------|-----------------------|
| ENGR 667 | Project Management for Engineers | 3 |
| Select three of the following: | | 9 |

BMEN 643 Risk Based Development and Testing of Medical Devices

CVEN 638 Computer Integrated Construction Engineering Systems

CVEN 644 Project Risk Management

CVEN 668 Advanced EPC Project Development

CVEN 710 Civil Engineering Project Finance

CVEN 717 Engineering Project Control

ENGR 684 Professional Internship ¹

ENGR 685 Directed Studies ¹

ISEN 613 Engineering Data Analysis

ISEN 630 Human Operator in Complex Systems

ISEN 641 Systems Engineering Methods and Frameworks

ISEN 667 Engineering Economy

PETE 622 Exploration and Production Evaluation

PETE 664 Petroleum Project Evaluation and Management

SENG 660 Quantitative Risk Analysis

Total Semester Credit Hours 12

- ¹ Use of ENGR 684 and/or ENGR 685 must be approved by the certificate program director.

Safety Engineering - Certificate

Graduate Certificate in Safety Engineering requirements are achievable and relevant to all engineering disciplines. Graduate students in any engineering discipline can choose this option as part of their curriculum. Students must complete 12 semester credit hours of specified courses to earn a Safety Engineering Certificate. Through this option, students are exposed to principles and case histories from a wide variety of engineering disciplines. The curriculum emphasizes the interdisciplinary nature of safety, health, and environmental engineering. It also emphasizes the knowledge and skills most likely to be needed by any engineer, as well as those who specialize in Safety Engineering.

The proposed Graduate Certificate in Safety Engineering, which will be administered by the Mary Kay O'Connor Process Safety Center, seeks to serve all engineering disciplines equally well.

Program Requirements

The certificate requires 12 hours of coursework. It is the intent that these hours are applicable to the hours necessary for graduation and not an additional load, but this will depend on the disciplines' specific course requirements. Receiving the certificate is not dependent on conferral of a degree. Of the total hours required for the Certificate, six hours are dedicated to Basic Topics and are required for everyone in the program. An additional six hours address more specific or advanced topics. The advanced topics are cross-listed with numerous departments.

| Code | Title | Semester Credit Hours |
|-------------------------|----------------------------|-----------------------|
| Required Courses | | |
| SENG 655/ CHEN 655 | Process Safety Engineering | 3 |

| | | |
|------------------------------|-------------------------------------------------|----|
| SENG 660/ | Quantitative Risk Analysis | 3 |
| CHEN 660 | | |
| Select two of the following: | | 6 |
| CHEN 661 | Optimization of Chemical Engineering Processes | |
| CVEN 610/ | Environmental Risk Assessment | |
| PHEO 650 | | |
| CVEN 655 | Structural Reliability | |
| CVEN 686 | Offshore and Coastal Structures | |
| ISEN 612 | Design by Reliability | |
| ISEN 627 | Engineering Analysis for Decision Making | |
| ISEN 630 | Human Operator in Complex Systems | |
| MEEN 652 | Multivariable Control System Design | |
| NUEN 612 | Radiological Safety and Hazards Evaluation | |
| NUEN 689 | Special Topics in... | |
| SENG 685 | Directed Studies | |
| SENG 422 | Fire Protection Engineering - Facilities Design | |
| STAT 601 | Statistical Analysis | |
| Total Semester Credit Hours | | 12 |

Department of Aerospace Engineering

<http://engineering.tamu.edu/aerospace>

Head: R.D. Bowersox

Graduate Program Director: J.L. Valasek

Graduate Advisor: Gail Rowe

The Department of Aerospace Engineering offers graduate work and research programs in aeronautical/aerospace engineering. Programs leading to the degrees of MEng, MS, and PhD are available. The department also offers courses and faculty supervision for students pursuing the Doctor of Engineering degree. The department provides educational and research opportunities in the three core discipline areas associated with aerospace engineering. These are (1) aerodynamics and propulsion, (2) dynamics and control, and (3) materials and structures. Areas of interest include aerodynamics, hypersonics, autonomous air/ground/space systems, machine learning and artificial intelligence, lasers, optics, plasma, electromagnetics, robotics, computational fluid dynamics, fluid-structure interaction (aeroelasticity), flight mechanics, astrodynamics, aircraft/spacecraft dynamics and control, rotorcraft, computational mechanics, solid mechanics, micromechanics, multifunctional materials, high temperature materials, nanomechanics, composite materials, bio-nano materials, aging aircraft and structures. A foreign language is not required for any of the aerospace degree programs.

The 28 well equipped laboratories in the department include the Advanced Vertical Flight Laboratory, Aero and Fluid Dynamics Laboratory, Aerospace Laboratory for Lasers, Electromagnetics, and Optics (ALLEMO), Aerospace Systems, Technology Research & Operations

(ASTRO) Laboratory, Aerospace Vehicle Systems Institute (AVSI), AggieSat Small Satellite Program Laboratory, Center for Intelligent Multifunctional Materials and Structures, Computational Stability and Transition Laboratory, Estimation, Decision and Planning Laboratory, High Temperature Gasdynamics Laboratory, Immersive Mechanics Visualization Laboratory, Klebanoff–Saric Low-Speed Low Disturbance Wind Tunnel (KSWT), Laboratory for Uncertainty Quantification, Land, Air and Space Robotics (LASR) Laboratory, Laser Diagnostics and High-Speed Combustion Laboratory, Materials and Testing Laboratory, Multifunctional Materials and Aerospace Structures Optimization (M2AESTRO) Laboratory, Nanostructured Materials Laboratory, National Aerothermochemistry and Hypersonics Laboratory (NAL), Oran W. Nicks Low-Speed Wind Tunnel (LSWT), Plasma Dynamics Modeling Laboratory, Plasma Simulation Laboratory, Propulsion Laboratory, Systems Engineering, Architecture and Knowledge (SEAK), Tensegrity & Morphing Structures Laboratory, Turbulence and Advanced Computations Laboratory (TACL), Vehicle Systems & Control Laboratory (VSCL), and ZLab, as well as modern High Speed Computing Facilities.

Faculty

Alfriend III, Kyle T, Distinguished Professor
Aerospace Engineering
PHD, Virginia Polytechnic Institute and State University, 1967

Andrienko, Daniil Aleksandrovich, Assistant Professor
Aerospace Engineering
PHD, Moscow Institute of Physics and Technology, 2014
PHD, Wright State University, 2014

Benzerger, Amine A, Professor
Aerospace Engineering
PHD, Ecole Nationale Supérieure Des Mines De Paris, 2000

Bhattacharya, Raktim, Associate Professor
Aerospace Engineering
PHD, University of Minnesota, 2003

Bowersox, Rodney D, Professor
Aerospace Engineering
PHD, Virginia Tech, 1992

Boyd, James G, Associate Professor
Aerospace Engineering
PHD, Texas A&M University, 1994

Chakravorty, Suman, Associate Professor
Aerospace Engineering
PHD, University of Michigan, 2004

Chamitoff, Gregory E, Professor of the Practice
Aerospace Engineering
PHD, Massachusetts Institute of Technology, 1992

Cizmas, Paul G, Professor
Aerospace Engineering
PHD, Duke University, 1995

Cruzado Garcia, Aitor, Lecturer
Aerospace Engineering
PHD, Mondragon University, 2013

Diaz Artilles, Ana, Assistant Professor
Aerospace Engineering
PHD, Massachusetts Institute of Technology, 2015

Donzis, Diego A, Associate Professor
Aerospace Engineering
PHD, Georgia Institute of Technology, 2007

Dunbar, Bonnie Jeanne, Professor
Aerospace Engineering
PHD, University of Houston, 1983

Gerakis, Alexandros, Assistant Professor
Aerospace Engineering
PHD, University College London, 2014

Girimaji, Sharath S, Professor
Aerospace Engineering
PHD, Cornell University, 1990

Hara, Kentaro, Assistant Professor
Aerospace Engineering
PHD, University of Michigan - Ann Arbor, 2015

Hartl, Darren J, Assistant Professor
Aerospace Engineering
PHD, Texas A&M University, 2009

Hurtado, John E, Professor
Aerospace Engineering
PHD, Texas A&M University, 1995

Jameson, Antony, Professor
Aerospace Engineering
PHD, Cambridge University, 1963
PHD, University of Cambridge, 1963

Junkins, John L, University Distinguished Professor
Aerospace Engineering
PHD, University of California, Los Angeles, 1969

Karaman, Ibrahim, Professor
Aerospace Engineering
PHD, University of Illinois - Urbana-Champaign, 2000

Karpetis, Adonios N, Associate Professor
Aerospace Engineering
PHD, Yale University, 1998

Kinra, Vikram K, Professor
Aerospace Engineering
PHD, Brown University, 1975

Kulatilaka, Waruna D, Associate Professor
Aerospace Engineering
DEN, Purdue University, 2006

Lagoudas, Dimitris C, Distinguished Professor
Aerospace Engineering
PHD, Lehigh University, 1986

Langari, Gholamreza, Professor
Aerospace Engineering
PHD, University of California, Berkeley, 1991

Le Graverend, Jean-Briac B, Assistant Professor
Aerospace Engineering
PHD, Ecole Nationale de Mécanique et d'Aérotechnique, France, 2013

Limbach, Christopher M, Assistant Professor
Aerospace Engineering
PHD, Princeton University, 2015

Majji, Manoranjan, Assistant Professor
Aerospace Engineering
PHD, Texas A&M University, 2009

Miles, Richard B, Professor
Aerospace Engineering
PHD, Stanford University, 1972

Moble, Benedict, Assistant Professor
Aerospace Engineering
PHD, University of Maryland, 2010

Mortari, Daniele, Professor
Aerospace Engineering
PHD, University La Sapienza of Rome, 1980

Naraghi, Mohammad, Associate Professor
Aerospace Engineering
PHD, University of Illinois at Urbana Champaign, 2009

Oran, Elaine, Professor
Aerospace Engineering
PHD, Yale University, 1972

Pollock, Thomas C, Senior Associate Professor
Aerospace Engineering
PHD, University of Virginia, 1977

Poludnenko, Oleksiy Y, Associate Professor
Aerospace Engineering
PHD, University of Rochester, 2004

Reddy, Junuthula N, University Distinguished Professor
Aerospace Engineering
PHD, University of Alabama at Huntsville, 1974

Reed, Helen L, Professor
Aerospace Engineering
PHD, Virginia Tech, 1981

Richard, Jacques C, Senior Lecturer
Aerospace Engineering
PHD, Rensselaer University, 1989

Saric, William S, University Distinguished Professor
Aerospace Engineering
PHD, Illinois Institute of Technology, 1968

Scully, Marlan O, University Distinguished Professor
Aerospace Engineering
PHD, Yale University, 1966

Selva Valero, Daniel, Assistant Professor
Aerospace Engineering
PHD, Massachusetts Institute of Technology, 2012

Shryock, Kristi J, Associate Professor of Instruction
Aerospace Engineering
PHD, Texas A&M University, 2011

Skelton, Robert E, Professor
Aerospace Engineering
PHD, University of California, 1976

Strganac, Thomas W, Professor
Aerospace Engineering
PHD, Virginia Tech, 1987

Strouboulis, Theofanis, Professor
Aerospace Engineering
PHD, University of Texas - Austin, 1986

Talreja, Ramesh R, Professor
Aerospace Engineering
PHD, The Technical University of Denmark, 1974

Tichenor, Nathan R, Research Assistant Professor
Aerospace Engineering
PHD, Texas A&M University, 2010

Tropina, Albina, Research Professor
Aerospace Engineering
PHD, Kyiv Aviation University, 2011
PHD, V.N. Karazin Kharkiv National University, 2000

Vadali, Srinivas R, Professor
Aerospace Engineering
PHD, Virginia Tech, 1983

Valasek, John L, Professor
Aerospace Engineering
PHD, University of Kansas, 1995

Whitcomb, John D, Professor
Aerospace Engineering
PHD, Virginia Tech, 1988

White, Edward B, Professor
Aerospace Engineering
PHD, Arizona State University, 2000

Wong, Zi Jing, Assistant Professor
Aerospace Engineering
PHD, University of California, Berkeley, 2015

Masters

- Master of Engineering in Aerospace Engineering (p. 710)
- Master of Science in Aerospace Engineering (p. 712)

Doctoral

- Doctor of Philosophy in Aerospace Engineering (p. 716)

Master of Engineering in Aerospace Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to

graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 710)
- Degree Plan (p. 711)
- Credit Requirement (p. 711)
- Transfer of Credit (p. 711)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 711)
- Final Examination (p. 712)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is

registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which **no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for

transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.

- Continuing education courses may not be used for graduate credit.
- Extension courses are not acceptable for credit.
- For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
- To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the MEng Aerospace Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 712)
- Time Limit (p. 712)
- Foreign Languages (p. 712)
- Internship or Practicum (p. 712)
- Application for Degree (p. 712)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Aerospace Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 713)
- Degree Plan (p. 714)
- Credit Requirements (p. 714)
- Transfer of Credit (p. 714)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 714)
- Thesis Option (p. 715)
 - Thesis Proposal (p. 715)
 - Final Examination/ThesisDefense (p. 715)
- Non-Thesis Option (p. 715)

Student's Advisory Committee

The Master of Science in Aerospace Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-

thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members

may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U**

for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Aerospace Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements
Additional Requirements

- Residence (p. 716)
- Continuous Registration (p. 716)
- Time Limit (p. 716)
- Foreign Languages (p. 716)
- Application for Degree (p. 716)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Aerospace Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 717)
- Degree Plan (p. 718)
- Transfer of Credit (p. 718)
- Research Proposal (p. 718)
- Examinations (p. 719)
 - Preliminary Examination (p. 719)
 - Preliminary Examination Format (p. 719)
 - Preliminary Examination Scheduling (p. 719)
 - Report of Preliminary Examination (p. 719)
 - Retake of Failed Preliminary Examination (p. 720)
 - Final Examination (p. 720)
 - Report of Final Examination (p. 720)
- Dissertation (p. 720)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 721)
- Time Limit (p. 721)
- Continuous Registration (p. 721)
- Admission to Candidacy (p. 721)
- Languages (p. 721)
- 99-Hour Cap on Doctoral Degree (p. 721)
- Application for Degree (p. 722)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Biomedical Engineering

<http://engineering.tamu.edu/biomedical>

Head: M. McShane

Graduate Advisor: R. Kaunas

Committed to solving the world's greatest health problems through the exploration of new ideas, integrated research and innovation, the Department of Biomedical Engineering at Texas A&M University is producing the next generation of biomedical engineers in industry and at tier-one research institutions, developing new technologies and new jobs, and achieving revolutionary advancements for the future of health care.

Graduate students participate in ground-breaking research in biomedical imaging technologies, medical devices, sensing and monitoring systems and regenerative medicine. These concepts are applied and studied at the whole-body, tissue, cellular and molecular levels.

The department offers Doctor of Philosophy, Master of Science, Master of Engineering, and Master of Engineering/Master of Business Administration (in conjunction with the Mays Business School) programs.

For more information, including degree requirements and application deadlines, visit <http://engineering.tamu.edu/biomedical>.

Faculty

Alge, Daniel L, Assistant Professor
Biomedical Engineering
PHD, Purdue University, 2010

Applegate, Brian E, Associate Professor
Biomedical Engineering
PHD, Ohio State University, 2000

Bishop, Corey J, Assistant Professor
Biomedical Engineering
PHD, The Johns Hopkins University School of Medicine, 2015

Biswas, Saurabh, Associate Professor of the Practice
Biomedical Engineering
PHD, Texas A&M University, 2011

Bukkapatnam, Satish T, Professor
Biomedical Engineering
PHD, Pennsylvania State University, 1997

Clubb Jr, Fred J, Professor
Biomedical Engineering
PHD, University of Alabama - Birmingham, 1983
DVM, Auburn University, 1971

Cosgriff-Hernandez, Elizabeth M, Associate Professor
Biomedical Engineering
PHD, Case Western Reserve University, 2005

Cote, Gerard L, Professor
Biomedical Engineering
PHD, University of Connecticut, 1990

Criscione, John C, Professor
Biomedical Engineering
PHD, The John Hopkins University School of Medicine, 2005

Fink, Rainer J, Associate Professor
Biomedical Engineering
PHD, Texas A&M University, 1995

Freed, Alan D, Professor
Biomedical Engineering
DEN, University of Wisconsin - Madison, 1985

Gaharwar, Akhilesh K, Assistant Professor
Biomedical Engineering
PHD, Purdue University, 2011

Gibbs, Holly C, Lecturer
Biomedical Engineering
PHD, Texas A&M University, 2015

Gonezen, Sevan, Assistant Professor
Biomedical Engineering
PHD, Rensselaer Polytechnic Institute, 2011

Gregory, Carl A, Assistant Professor
Biomedical Engineering
PHD, University of Manchester, 1999

Grunlan, Melissa A, Professor
Biomedical Engineering
PHD, University of South Carolina, 2004

Guisseppi Elie, Anthony, Professor
Biomedical Engineering
PHD, Massachusetts Institute of Technology, 1983

Han, Arum, Professor
Biomedical Engineering
PHD, Georgia Institute of Technology, 2005

Hogan, Harry A, Associate Professor
Biomedical Engineering
PHD, Texas A&M University, 1984

Huang, Shuning, Lecturer
Biomedical Engineering
PHD, Massachusetts Institute of Technology, 2009

Hwang, Wonmuk, Associate Professor
Biomedical Engineering
PHD, Boston University, 2001

Jafari, Roozbeh, Associate Professor
Biomedical Engineering
PHD, University of California, 2006

Jain, Abhishek, Assistant Professor
Biomedical Engineering
PHD, Boston University, 2012

Jayaraman, Arul, Professor
Biomedical Engineering
PHD, University of California, Irvine, 1998

Jo, Javier A, Associate Professor
Biomedical Engineering
PHD, University of Southern California, 2002

Kaunas, Roland R, Associate Professor
Biomedical Engineering
PHD, University of California, San Diego, 2003

Keller, Brandis K, Lecturer
Biomedical Engineering
PHD, Politecnico di Milano, 2013

Lawley, Mark A, Professor
Biomedical Engineering
PHD, University of Illinois at Urbana-Champaign, 1995

Mabbott, Samuel, Assistant Professor
Biomedical Engineering
PHD, University of Manchester, Manchester Interdisciplinary Biocentre, 2012

Maitland IV, Duncan J, Professor
Biomedical Engineering
PHD, Northwestern University, 1995

Maitland, Kristen D, Associate Professor
Biomedical Engineering
PHD, University of Texas, 2006

McDougall, Mary P, Associate Professor
Biomedical Engineering
PHD, Texas A&M University, 2004

McShane II, Michael J, Professor
Biomedical Engineering
PHD, Texas A&M University, 1999

Moreno, Michael R, Assistant Professor
Biomedical Engineering
PHD, Texas A&M University, 2009

Ober, Raimund J, Professor
Biomedical Engineering
PHD, University of Cambridge, 1988
PHD, Cambridge University, 1987

Peak, Charles W, Instructional Assistant Professor
Biomedical Engineering
PHD, Texas A&M University, 2018

Peterson, Donald, Professor
Biomedical Engineering
PHD, University of Connecticut, 1999

Quick, Christopher M, Associate Professor
Biomedical Engineering
PHD, Rutgers University, 1999

Rajagopal, Kumbakonam, Professor
Biomedical Engineering
PHD, University of Minnesota, 1978

Stoica, Gheorghe, Professor
Biomedical Engineering
PHD, Michigan State University, 1984
DVM, Institute of Agronomy, Yassy, Romania, 1966

Tian, Limei, Assistant Professor
Biomedical Engineering
PHD, Washington University in St. Louis, 2014

Trache, Andreea, Associate Professor
Biomedical Engineering
PHD, Institute of Atomic Physics, Romania, 1996

Ugaz, Victor M, Professor
Biomedical Engineering
PHD, Northwestern University, 1999

Wilson, Emily, Professor
Biomedical Engineering
PHD, Emory University, 1987

Wright, Steven M, Professor
Biomedical Engineering
PHD, University of Illinois, 1984

Yakovlev, Vladislav V, Professor
Biomedical Engineering
PHD, Moscow State University, 1990

Yeh, Alvin T, Associate Professor
Biomedical Engineering
PHD, University of California, Berkeley, 2000

Masters

- Master of Engineering in Biomedical Engineering (p. 724)
- Master of Science in Biomedical Engineering (p. 726)

Doctoral

- Doctor of Philosophy in Biomedical Engineering (p. 730)

Certificates

- Quality Engineering for Regulated Medical Technologies Certificate

Master of Engineering in Biomedical Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MEng)**, majoring in his or her particular field of engineering.

The work in the major field will include an immersion experience providing students the opportunity to receive specialized training in industry or the clinic.

The Master of Engineering program in the Department of Biomedical Engineering at Texas A&M University is an experiential, learning-based experience designed to prepare engineers to enter the medical devices industry. The program spans the entire medical device life cycle, covering important topics such as problem definition, solution development, technology assessment/intellectual property, detailed design and engineering, risk analysis, design verification and validation strategies, quality engineering, regulatory and reimbursement strategies, market analysis, and go-to-market/revenue modeling strategies.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 724)
- Degree Plan (p. 724)
- Credit Requirement (p. 725)
- Transfer of Credit (p. 725)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 725)
- Final Examination (p. 725)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select

the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the MEng Biomedical Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 725)
- Time Limit (p. 726)
- Foreign Languages (p. 726)
- Internship or Practicum (p. 726)
- Application for Degree (p. 726)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Biomedical Engineering

The Master of Science program in the Department of Biomedical Engineering at Texas A&M University is based in building fundamental research skills and content knowledge to prepare engineers to enter various careers ranging from research and development to medical devices design to a doctorate and academic career. A custom coursework plan is created for each student based on their goals, interest, and current expertise and knowledge to best prepare them for their desired career path.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 727)
- Degree Plan (p. 727)
- Credit Requirements (p. 727)
- Transfer of Credit (p. 727)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 728)
- Thesis Option (p. 728)
 - Thesis Proposal (p. 728)
 - Final Examination/Thesis Defense (p. 729)
- Non-Thesis Option (p. 729)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree. A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research

compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office

of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 729)
- Continuous Registration (p. 730)
- Time Limit (p. 730)
- Foreign Languages (p. 730)
- Application for Degree (p. 730)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along

with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Biomedical Engineering

The doctoral program in the Department of Biomedical Engineering at Texas A&M University is a research intensive program designed to prepare engineers to enter careers in industry, government, or academia. A custom coursework plan is created for each student based on their goals, interests, and current expertise and knowledge to best prepare them for their desired career path.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S.

DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 731)
- Degree Plan (p. 731)
- Transfer of Credit (p. 732)
- Research Proposal (p. 732)
- Examinations (p. 732)
 - Preliminary Examination (p. 732)
 - Preliminary Examination Format (p. 732)
 - Preliminary Examination Scheduling (p. 733)

- Report of Preliminary Examination (p. 733)
- Retake of Failed Preliminary Examination (p. 733)
- Final Examination (p. 734)
- Report of Final Examination (p. 734)
- Dissertation (p. 734)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 734)
- Time Limit (p. 735)
- Continuous Registration (p. 735)
- Admission to Candidacy (p. 735)
- Languages (p. 735)
- 99-Hour Cap on Doctoral Degree (p. 735)
- Application for Degree (p. 736)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Quality Engineering for Regulated Medical Technologies - Certificate

Quality engineering management systems are mandated by federal and state regulations for the designing, testing, and manufacturing of medical technologies such as pharmaceuticals, imaging technologies, and medical diagnostic and therapeutic devices. Different and complimentary quality regulations apply to both clinical and pre-clinical facilities involved in testing and validating new technologies. Completion of this certificate requires specific instruction in both quality engineering and regulation of medical technologies; moreover, candidates must go beyond understanding concepts by demonstrating appropriate use of quality engineering principles in a medically-related internship. Given the challenge to achieve both improved outcomes and lower costs in medical care, candidates for this certificate are expected to be entering a high-growth job market for biomedical engineers.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|----------------------------------------------------------------------------------------|-----------------------|
| Required Internship | | |
| Select one of the following: | | 3 |
| | Internship (position must be approved by certificate faculty to meet experience needs) | |
| | Bioinnovation I-Summer Clinical Fellowship | |
| Required Courses | | |
| Select from the following: | | 6-9 |
| BMEN 604 | FDA Good Laboratory and Clinical Practices | |
| BMEN 606 | Medical Device Path to Market or BMEN or Entrepreneurial Pathways in Medical Devices | |
| ISEN 614 | Advanced Quality Control | |
| Elective Courses | | |
| Select from the following: | | 0-3 |
| BMEN 643 | Risk Based Development and Testing of Medical Devices | |
| ISEN 616 | Design and Analysis of Industrial Experiments | |
| VTMI 629/ SCSC 629 | Laboratory Quality Systems | |
| Total Semester Credit Hours | | 12 |

Artie McFerrin Department of Chemical Engineering

<http://engineering.tamu.edu/chemical>

Head: M. N. Karim

Graduate Advisor: A. Jayaraman

The Department of Chemical Engineering offers three graduate degrees: Doctor of Philosophy (PhD), Master of Science (MS), and Master of Engineering (MEng). The PhD and MS degree programs include a significant research component in addition to graduate coursework. Information about specific departmental requirements for coursework and examinations is available upon request from the graduate advisor and on our website: <http://engineering.tamu.edu/chemical>.

Some of the research areas available within the department include: advanced materials, applied fluid mechanics and transport phenomena, catalysis, kinetics and reaction engineering, microelectronics and plasma processing, nanotechnology, polymers, process modeling and control, process optimization, process safety and design, systems biology, thermodynamics, and molecular simulation. Modern equipment is available in numerous laboratories to perform research in these and other areas.

There is no foreign language requirement for the PhD program in chemical engineering.

Faculty

Akbulut, Mustafa, Associate Professor
Chemical Engineering
PHD, University of California, Santa Barbara, 2007

Balbuena, Perla B, Professor
Chemical Engineering
PHD, University of Texas, 1996

Barteau, Mark A, Professor
Chemical Engineering
PHD, Stanford University, 1981

Cheng, Zheng Dong, Professor
Chemical Engineering
PHD, Princeton University, 1999

Cochrum, Alan M, Lecturer
Chemical Engineering
PHD, University of Texas at Arlington, 2015

El-Halwagi, Mahmoud M, Professor
Chemical Engineering
PHD, University of California, Los Angeles, 1990

Elabd, Yossef A, Professor
Chemical Engineering
PHD, Johns Hopkins University, 2001

Gagnon, Zachary, Associate Professor
Chemical Engineering
PHD, University of Notre Dame, 2009

Glover, Charles J, Senior Professor
Chemical Engineering
PHD, Rice University, 1975

Green, Micah, Associate Professor
Chemical Engineering
PHD, Massachusetts Institute of Technology, 2007

Harris, James E, Professor of the Practice
Chemical Engineering
PHD, University of Texas, Austin, 1981

Hasan, M M Faruque, Assistant Professor
Chemical Engineering
PHD, National University of Singapore, 2010

Hilaly, Ahmad K, Professor of the Practice
Chemical Engineering
PHD, Colorado State University, 1992

Holste, James C, Senior Professor
Chemical Engineering
PHD, Iowa State University, 1973

Holtzapple, Mark T, Professor
Chemical Engineering
PHD, University of Pennsylvania, 1981

Jayaraman, Arul, Professor
Chemical Engineering
PHD, University of California, Irvine, 1998

Jeong, Hae-Kwon, Associate Professor
Chemical Engineering
PHD, University of Minnesota, 2004

Kao, Katy C, Associate Professor
Chemical Engineering
PHD, University of California, Los Angeles, 2005

Karim, Muhammad N, Professor
Chemical Engineering
PHD, University of Manchester, 1977

Khosravianghadikolaei, Homa, Research Assistant Professor
Chemical Engineering
PHD, University of Illinois at Chicago, 2013

Kravaris, Costas, Professor
Chemical Engineering
PHD, California Institute of Technology, 1984

Kuo, Yue, Professor
Chemical Engineering
PHD, Columbia University, 1980

Kwon, Joseph, Assistant Professor
Chemical Engineering
PHD, University of California, Los Angeles, 2015

Lele, Pushkar P, Assistant Professor
Chemical Engineering
PHD, University of Delaware, Newark, 2010

Lutkenhaus, Jodie L, Associate Professor
Chemical Engineering
PHD, University of Notre Dame, 2003

Mannan, Mahboobul, Professor
Chemical Engineering
PHD, University of Oklahoma, 1986

Mashuga, Chad V, Assistant Professor
Chemical Engineering
PHD, Michigan Technological University, 1999

Menon, Rani, TEES Assistant Research Scientist
Chemical Engineering
PHD, The University of Mississippi, 2011

Pistikopoulos, Efstratios, Professor
Chemical Engineering
PHD, Carnegie Mellon University, 1988

Rafferty, Jonathan P, Lecturer
Chemical Engineering
PHD, Texas A&M University, 2018
PHD, Texas A&M University, 2017

Rogers, William J, Lecturer
Chemical Engineering
PHD, Ohio State University, 1976

Seminario, Jorge M, Professor
Chemical Engineering
PHD, Southern Illinois University Carbondale, 1987

Shahrashoob, Zahra, Lecturer
Chemical Engineering
PHD, University of Oklahoma, 2018

Sun, Qing, Assistant Professor
Chemical Engineering
PHD, University of Delaware, 2010

Tamamis, Phanourios, Assistant Professor
Chemical Engineering
PHD, University of Cyprus, 2010

Vaddiraju, Sreeram, Associate Professor
Chemical Engineering
PHD, University of Louisville, 2006

Wilhite, Benjamin A, Associate Professor
Chemical Engineering
PHD, University of Notre Dame, 2003

Wilson, Christin M, Lecturer
Chemical Engineering
PHD, The Ohio State University, 2012

Wu, Hung-Jen, Assistant Professor
Chemical Engineering
PHD, Texas A&M University, 2006

Masters

- Master of Engineering in Chemical Engineering (p. 738)
- Master of Science in Chemical Engineering (p. 740)

Doctoral

- Doctor of Philosophy in Chemical Engineering (p. 744)

Certificates

- Engineering Therapeutics Manufacturing Certificate (p. 749)

Master of Engineering in Chemical Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 738)
- Degree Plan (p. 738)
- Credit Requirement (p. 738)
- Transfer of Credit (p. 738)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 739)
- Final Examination (p. 739)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree.

Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in which **no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for

transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the MEng Chemical Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 739)
- Time Limit (p. 739)
- Foreign Languages (p. 739)
- Internship or Practicum (p. 739)
- Application for Degree (p. 739)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Chemical Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

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|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

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|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 1 | The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . | |
| 2 | Complete the application for degree form via the student's Howdy portal. | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 740)
- Degree Plan (p. 741)
- Credit Requirements (p. 741)
- Transfer of Credit (p. 741)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 742)
- Thesis Option (p. 742)
 - Thesis Proposal (p. 742)
 - Final Examination/Thesis Defense (p. 742)
- Non-Thesis Option (p. 743)

Student's Advisory Committee

The Master of Science in Chemical Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate

faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed**

and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U**

for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Chemical Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 743)
- Continuous Registration (p. 743)
- Time Limit (p. 743)
- Foreign Languages (p. 744)
- Application for Degree (p. 744)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Chemical Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

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| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

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| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 745)
- Degree Plan (p. 745)
- Transfer of Credit (p. 746)
- Research Proposal (p. 746)
- Examinations (p. 746)
 - Preliminary Examination (p. 746)
 - Preliminary Examination Format (p. 746)
 - Preliminary Examination Scheduling (p. 747)
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Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 748)
- Time Limit (p. 749)
- Continuous Registration (p. 749)
- Admission to Candidacy (p. 749)
- Languages (p. 749)
- 99-Hour Cap on Doctoral Degree (p. 749)
- Application for Degree (p. 749)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Engineering Therapeutics Manufacturing - Certificate

For more information regarding the Engineering Therapeutics Manufacturing Certificate, please visit this website (<http://engineering.tamu.edu/academics/certificates/engineering-therapeutics-manufacturing>).

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|----------------------------------------|-----------------------|
| Required Courses | | |
| Select one of the following: | | 3 |
| BAEN 601 | Advanced Agricultural Systems Analysis | |

| | | |
|--------------------------------|--------------------------------------------------|----|
| CHEN 651 | Biochemical Engineering | |
| ISEN 645 | Lean Engineering | |
| Prescribed Electives | | |
| Select three of the following: | | 9 |
| BAEN 631 | Bioprocesses and Separations in Biotechnology | |
| BAEN 653 | Bioreactor Design | |
| BMEN 604 | FDA Good Laboratory and Clinical Practices | |
| BMEN 686 | Biomedical Nanotechnology | |
| BMEN 687 | Drug Delivery | |
| CHEN 614 | Advanced Transport Phenomena I | |
| CHEN 624 | Chemical Engineering Kinetics and Reactor Design | |
| CHEN 629 | Transport Phenomena | |
| CHEN 631 | Process Dynamics and Advanced Process Control | |
| CHEN 651 | Biochemical Engineering | |
| CHEN 655/ SENG 655 | Process Safety Engineering | |
| CHEN 663 | Systems Biology | |
| ISEN 613 | Engineering Data Analysis | |
| Total Semester Credit Hours | | 12 |

Zachry Department of Civil and Environmental Engineering

<http://engineering.tamu.edu/civil>

Department Head: Dr. Robin L. Autenrieth

Graduate Advisor: Dr. Mark Burris

A variety of courses are offered in civil engineering to permit a student to study one of nine specialty areas. The department is especially well equipped to offer research and courses in coastal and ocean engineering; construction engineering management; environmental engineering; infrastructure management systems; geotechnical engineering; materials engineering; structural engineering; transportation engineering and water resources engineering.

Modern facilities and current equipment are available to enhance study and instruction in civil engineering. These facilities include the following laboratories: fluid and wave mechanics, construction materials, materials science, sensors, soil mechanics, biological, high bay, Center for Infrastructure Renewal, Offshore Technology Research Center and several facilities shared with the Texas A&M Transportation Institute.

No foreign language is required for the PhD in civil engineering. Students pursuing a PhD or DEng are required to pass the Civil Engineering qualifying exam.

Faculty

Abdel-Wahab, Ahmed I, Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 2003

Abedi Mashhadimighani, Sara,
Civil & Environmental Engineering
PHD, University of Southern California, 2012

Aubeny, Charles P, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1992

Autenrieth, Robin L, Professor
Civil & Environmental Engineering
PHD, Clarkson University, 1986

Banks, Margaret K, Distinguished Professor
Civil & Environmental Engineering
PHD, Duke University, 1989

Barroso, Luciana R, Associate Professor
Civil & Environmental Engineering
PHD, Stanford University, 1999

Batchelor, Bill, Senior Professor
Civil & Environmental Engineering
PHD, Cornell University, 1976

Birely, Anna C, Associate Professor
Civil & Environmental Engineering
PHD, University of Washington, 2012

Birgisson, Bjorn, Professor
Civil & Environmental Engineering
PHD, University of Minnesota, 1996

Bracci, Joseph M, Professor
Civil & Environmental Engineering
PHD, University at Buffalo - SUNY, 1992

Brackin, Michael S, Instructional Assistant Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 2017

Briaud, Jean-Louis, Distinguished Professor
Civil & Environmental Engineering
PHD, University of Ottawa, Canada, 1979

Brumbelow, James K, Associate Professor
Civil & Environmental Engineering
PHD, Georgia Institute of Technology, 2001

Burris, Mark W, Professor
Civil & Environmental Engineering
DOC, University of South Florida, 2001

Cahill, Anthony T, Associate Professor
Civil & Environmental Engineering
PHD, Johns Hopkins University, 1998

Chang, Kuang-An, Professor
Civil & Environmental Engineering
PHD, Cornell University, 1999

Chellam, Shankararaman, Professor
Civil & Environmental Engineering
PHD, Rice University, 1995

Chen, Hamn C, Professor
Civil & Environmental Engineering
PHD, University of Iowa, 1982

Chu, Kung-Hui, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Berkeley, 1998

Damnjanovic, Ivan, Associate Professor
Civil & Environmental Engineering
PHD, University of Texas, 2006

England, Peter S, Instructional Associate Professor
Civil & Environmental Engineering
PHD, Texas Tech University, 2011

Ford, David N, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1995

Gao, Huilin, Associate Professor
Civil & Environmental Engineering
PHD, Princeton University, 2005

Gharaibeh, Nasir G, Associate Professor
Civil & Environmental Engineering
PHD, University of Illinois, 1997

Grasley, Zachary C, Professor
Civil & Environmental Engineering
PHD, University of Illinois Urbana Champaign, 2006

Hawkins Jr, Harvey E, Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1993

Hueste, Marybeth D, Professor
Civil & Environmental Engineering
PHD, University of Michigan, 1997

Hurlebaus, Stefan, Professor
Civil & Environmental Engineering
PHD, University of Stuttgart, Germany, 2002

Jones, Harry L, Senior Professor
Civil & Environmental Engineering
PHD, University of Illinois, 1969

Kaihatu, James M, Professor
Civil & Environmental Engineering
PHD, University of Delaware, 1994

Keating, Peter B, Associate Professor
Civil & Environmental Engineering
PHD, Lehigh University, 1987

Koliou, Maria, Assistant Professor
Civil & Environmental Engineering
PHD, University of Buffalo - The State University of New York, 2014

Little, Dallas N, Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1979

London, Mara R, Instructional Associate Professor
Civil & Environmental Engineering
PHD, University of Texas at Austin, 2009

Lord, Dominique, Professor
Civil & Environmental Engineering
PHD, University of Toronto, 2000

Lowery Jr, Lee L, Senior Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1967

Lytton, Robert L, Professor
Civil & Environmental Engineering
PHD, University of Texas - Austin, 1967

Ma, Xingmao, Associate Professor
Civil & Environmental Engineering
PHD, Missouri University of Science and Technology, 2004

Mander, John B, Professor
Civil & Environmental Engineering
PHD, University of Canterbury, 1984

Martin, Amy E, Professor
Civil & Environmental Engineering
PHD, University of California, Berkeley, 1997

Masad, Eyad, Professor
Civil & Environmental Engineering
PHD, Washington State University, 1998

Medina Cetina, Zenon, Associate Professor
Civil & Environmental Engineering
PHD, John Hopkins University, 2007
PHD, Johns Hopkins University, 2007

Mercier, Richard S, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1985

Miller, Gretchen R, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Berkeley, 2009

Mohtar, Rabi H, Professor
Civil & Environmental Engineering
PHD, Michigan State University, 1994

Mostafavidarani, Ali, Assistant Professor
Civil & Environmental Engineering
PHD, Purdue University, 2013

Nelson Jr, James K, Professor of Instruction
Civil & Environmental Engineering
PHD, University of Houston, 1983

Niedzwecki, John M, Professor
Civil & Environmental Engineering
PHD, The Catholic University of America, 1977

Noshadravan, Arash, Assistant Professor
Civil & Environmental Engineering
PHD, University of Southern California, 2011

Olivera, Francisco, Associate Professor
Civil & Environmental Engineering
PHD, University of Texas, 1996

Otey, Jeffrey M, Instructional Assistant Professor
Civil & Environmental Engineering
PHD, Universitat Politècnica de València, Spain, 2017

Paal, Stephanie G, Assistant Professor
Civil & Environmental Engineering
PHD, Georgia Institute of Technology, 2013

Quadrifoglio, Luca, Associate Professor
Civil & Environmental Engineering
PHD, University of Southern California, 2005

Rajagopal, Kumbakonam, University Distinguished Professor
Civil & Environmental Engineering
PHD, University of Minnesota, 1978

Reddy, Junuthula N, University Distinguished Professor
Civil & Environmental Engineering
PHD, University of Alabama at Huntsville, 1974

Rodriguez, Ignacio J, Distinguished Professor
Civil & Environmental Engineering
PHD, Colorado State University, 1967

Sakhaei Far, Maryam S, Assistant Professor
Civil & Environmental Engineering
PHD, North Carolina State University, 2011

Sanchez Castilla, Marcelo Javier, Professor
Civil & Environmental Engineering
PHD, Universidad Politecnica de Catalunya (UPC), Barcelona, Spain, 2004

Shidlovskaya, Anna V, Visiting Professor
Civil & Environmental Engineering
PHD, National Mineral Resources University, 2005
PHD, National Mineral Resources University, Russia, 2005

Sideris, Petros, Assistant Professor
Civil & Environmental Engineering
PHD, University of Buffalo, State University of New York, 2012

Socolofsky, Scott A, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 2001

Talebpour, Alireza, Assistant Professor
Civil & Environmental Engineering
PHD, Northwestern University, 2015

Tracy, John C, Professor
Civil & Environmental Engineering
PHD, University of California Davis, 1989

Walewski, John A, Associate Professor of the Practice
Civil & Environmental Engineering
PHD, University of Texas, 2005

Wang, Xiubin B, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Irvine, 2001

Wolf, Charles M, Professor of the Practice
Civil & Environmental Engineering
PHD, Texas A&M University, 2001

Wurbs, Ralph A, Senior Professor
Civil & Environmental Engineering
PHD, Colorado State University, 1978

Yarnold, Matthew T, Assistant Professor
Civil & Environmental Engineering
PHD, Drexel University, 2013

Ying, Qi, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Davis, 2004

Zhang, Yunlong, Professor
Civil & Environmental Engineering
PHD, Virginia Tech, 1996

Zollinger, Dan, Professor
Civil & Environmental Engineering
PHD, University of Illinois at Urbana-Champaign, 1989

Masters

- Master of Engineering in Civil Engineering (p. 752)
- Master of Science in Civil Engineering (p. 754)

Doctoral

- Doctor of Philosophy in Civil Engineering (p. 758)

Master of Engineering in Civil Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 752)
- Degree Plan (p. 753)
- Credit Requirement (p. 753)
- Transfer of Credit (p. 753)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 753)
- Final Examination (p. 754)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this

member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University,

or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
- The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 - A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 - Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
 - A maximum of 2 hours of Seminar (681).
 - A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 - For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 - No credit hours of 691 (Research) may be used.
 - Continuing education courses may not be used for graduate credit.
 - Extension courses are not acceptable for credit.
 - For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 - To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the MEng Civil Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 754)
- Time Limit (p. 754)
- Foreign Languages (p. 754)
- Internship or Practicum (p. 754)
- Application for Degree (p. 754)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Civil Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 755)
- Degree Plan (p. 756)
- Credit Requirements (p. 756)
- Transfer of Credit (p. 756)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 756)
- Thesis Option (p. 757)
 - Thesis Proposal (p. 757)
 - Final Examination/Thesis Defense (p. 757)
- Non-Thesis Option (p. 758)

Student's Advisory Committee

The Master of Science in Civil Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the

role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional

Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.

- Not more than 3 hours of 695 (Frontiers in Research) may be used.
- 5. A maximum of 2 hours of Seminar (681).
- 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
- 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
- 8. Continuing education courses may not be used for graduate credit.
- 9. Extension courses are not acceptable for credit.
- 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
- 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal

deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement

provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Civil Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

- Residence (p. 758)
- Continuous Registration (p. 758)
- Time Limit (p. 758)
- Foreign Languages (p. 758)
- Application for Degree (p. 758)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the

student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Civil Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 760)
- Degree Plan (p. 760)
- Transfer of Credit (p. 760)
- Research Proposal (p. 761)
- Examinations (p. 761)
 - Preliminary Examination (p. 761)
 - Preliminary Examination Format (p. 761)
 - Preliminary Examination Scheduling (p. 761)

- Report of Preliminary Examination (p. 762)
- Retake of Failed Preliminary Examination (p. 762)
- Final Examination (p. 762)
- Report of Final Examination (p. 762)
- Dissertation (p. 763)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 763)
- Time Limit (p. 763)
- Continuous Registration (p. 763)
- Admission to Candidacy (p. 763)
- Languages (p. 764)
- 99-Hour Cap on Doctoral Degree (p. 764)
- Application for Degree (p. 764)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Computer Science and Engineering

<http://www.cse.tamu.edu/>

Head: Dilma Da Silva

Graduate Advisor: Duncan M. "Hank" Walker

The Department of Computer Science and Engineering offers graduate studies leading to the degrees of Master of Computer Science, Master of Science in computer science and Doctor of Philosophy. In computer engineering, the Departments of Computer Science and Engineering and Electrical and Computer Engineering offer a joint program leading to the degrees of Master of Engineering, Master of Science and Doctor of Philosophy.

Advanced study in computer science is designed to provide the skills to design and utilize modern computer systems. The field of computer science is rapidly changing and expanding, generating a need for computer scientists in the burgeoning industry. The Department of Computer Science and Engineering is meeting these needs with advanced study in computer science.

Areas of study in computer science and engineering include five core areas and six multi-disciplinary areas. The five core areas include systems, software, theoretical foundations, human-centered systems and intelligent systems. The six multi-disciplinary areas include bioinformatics, brain networks, computational science and engineering, digital humanities, security, and emergency informatics.

Special laboratory facilities are available to graduate students in artificial intelligence, software engineering, graphics, robotics, distributed systems, real time computing, software, multimedia, computer architecture, and hypertext. The department houses a network of microcomputer systems and workstations for individual student use.

There is no foreign language requirement for the PhD program in computer science.

Faculty

Ahmed, Sarker T, Instructional Assistant Professor
Computer Science & Engineering
PHD, Texas A&M University, 2016

Akleman, Ergun, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1992

Amato, Nancy M, Professor
Computer Science & Engineering
PHD, University of Illinois, 1995

Bettati, Riccardo, Professor
Computer Science & Engineering
PHD, University of Illinois, 1994

Caverlee, James B, Associate Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 2007

Chai, Jinxiang, Associate Professor
Computer Science & Engineering
PHD, Carnegie Mellon University, 2006

Chaspari, Theodora, Assistant Professor
Computer Science & Engineering
PHD, University of Southern California, 2017

Chen, Jianer, Professor
Computer Science & Engineering
PHD, Columbia University, 1990

Choe, Yoonsuck, Professor
Computer Science & Engineering
PHD, University of Texas, 2001

Da Silva, Dilma M, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1997

Daughterity, Walter C, Senior Lecturer
Computer Science & Engineering
PHD, Harvard University, 1977

Davis, Timothy A, Professor
Computer Science & Engineering
PHD, University of Illinois - Urbana Champaign, 1989

Dewitte, Paula S, Associate Professor of the Practice
Computer Science & Engineering
PHD, Texas A&M University, 1989

Dongarra, Jack J, Visiting Professor
Computer Science & Engineering
PHD, University of New Mexico, 1980

Duffield, Nicholas G, Professor
Computer Science & Engineering
PHD, Queen Mary College, Univ. of London, 1987

Furuta, Richard K, Professor
Computer Science & Engineering
PHD, University of Washington, 1986

Garay, Juan A, Professor
Computer Science & Engineering
PHD, The Pennsylvania State University, 1989

Goldberg, Daniel W, Assistant Professor
Computer Science & Engineering
PHD, University of Southern California, 2010

Gooch, Bruce S, Associate Professor
Computer Science & Engineering
PHD, University of Utah, 2003

Gratz, Paul V, Associate Professor
Computer Science & Engineering
PHD, University of Texas, 2008

Gu, Guofei, Associate Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 2008

Guerra Nakamura, Fabiola, Senior Lecturer
Computer Science & Engineering
PHD, Federal University of Minas Gerais, 2010

Gutierrez-Osuna, Ricardo, Professor
Computer Science & Engineering
PHD, North Carolina State University, 1998

Hammond, Tracy A, Professor
Computer Science & Engineering
PHD, Massachusetts Inst of Technology, 2007

Houngninou, David Kebo, Instructional Assistant Professor
Computer Science & Engineering
PHD, Southern Methodist University, 2017

Hu, Jiang, Professor
Computer Science & Engineering
PHD, University of Minnesota, 2001

Hu, Xia, Assistant Professor
Computer Science & Engineering
PHD, Arizona State University, 2015

Huang, Ruihong, Assistant Professor
Computer Science & Engineering
PHD, University of Utah, 2014

Huang, Shaoming, Assistant Professor
Computer Science & Engineering
PHD, Hong Kong University of Science and Technology, 2012

Ioerger, Thomas R, Associate Professor
Computer Science & Engineering
PHD, University of Illinois, 1996

Jiang, Anxiao, Associate Professor
Computer Science & Engineering
PHD, California Institute of Technology, 2004

Jimenez, Daniel A, Professor
Computer Science & Engineering
PHD, University of Texas at Austin, 2002

Kerne, Andrew, Professor
Computer Science & Engineering
PHD, New York University, 2001

Keyser, John C, Professor
Computer Science & Engineering
PHD, University of North Carolina at Chapel Hill, 2000

Kim, Eun J, Associate Professor
Computer Science & Engineering
PHD, Pennsylvania State University, 2003

Klappenecker, Andreas, Professor
Computer Science & Engineering
PHD, Universitat Karlsruhe, 1998

Kum, Hye Chung, Associate Professor
Computer Science & Engineering
PHD, University of North Carolina - Chapel Hill, 2004

Lee, Hyunyoung, Senior Lecturer
Computer Science & Engineering
PHD, Texas A&M University, 2001

Leyk, Teresa S, Senior Lecturer
Computer Science & Engineering
PHD, Australian National University, 1998

Liu, Jyh C, Professor
Computer Science & Engineering
PHD, University of Michigan - Ann Arbor, 1989

Loguinov, Dmitri, Professor
Computer Science & Engineering
PHD, City University of New York, 2002

Mahapatra, Rabinarayan, Professor
Computer Science & Engineering
PHD, Indian Institute of Technology, Kharagpur, 1992

Moore, John Michael, Instructional Assistant Professor
Computer Science & Engineering
PHD, Texas A&M University, 2007

Mortazavi, Jack B, Assistant Professor
Computer Science & Engineering
PHD, University of California - Los Angeles, 2014

Murphy, Robin R, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1992

Nakamura, Eduardo F, Visiting Associate Professor
Computer Science & Engineering
PHD, Federal University of Minas Gerais, 2007

Narayanan, Krishna R, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1998

Quek, Francis K, Professor
Computer Science & Engineering
PHD, University of Michigan, 1990

Ragsdale, Daniel J, Professor of the Practice
Computer Science & Engineering
PHD, Texas A&M University, 2001

Rauchwerger, Lawrence, Professor
Computer Science & Engineering
PHD, University of Illinois, 1995

Ritchey, Philip C, Instructional Assistant Professor
Computer Science & Engineering
PHD, Purdue University, 2015

Rojas, Joseph M, Professor
Computer Science & Engineering
PHD, University of California, Berkeley, 1995

Sarin, Vivek, Associate Professor
Computer Science & Engineering
PHD, University of Illinois, 1997

Schaefer, Scott D, Professor
Computer Science & Engineering
PHD, Rice University, 2006

Sharon, Guni, Assistant Professor
Computer Science & Engineering
PHD, Ben-Gurion University, 2015

Shell, Dylan A, Associate Professor
Computer Science & Engineering
PHD, University of Southern California, 2008

Shipman III, Frank M, Professor
Computer Science & Engineering
PHD, University of Colorado, 1993

Song, Dezhen, Professor
Computer Science & Engineering
PHD, University of California, Berkeley, 2004

Song, Fang, Assistant Professor
Computer Science & Engineering
PHD, Penn State, 2013

Stoleru, Radu, Associate Professor
Computer Science & Engineering
PHD, University of Virginia, 2007

Sueda, Shinjiro, Assistant Professor
Computer Science & Engineering
PHD, University of British Columbia, 2010

Sze, Sing H, Associate Professor
Computer Science & Engineering
PHD, University of Southern California, 2000

Thomas, Shawna L, TEES Assistant Research Scientist
Computer Science & Engineering
PHD, Texas A&M University, 2010

Tyagi, Aakash, Professor of the Practice
Computer Science & Engineering
PHD, University of Louisiana, 1993

Walker, Duncan M, Professor
Computer Science & Engineering
PHD, Carnegie Mellon University, 1986

Wang, Zhangyang, Assistant Professor
Computer Science & Engineering
PHD, University of Illinois at Urbana-Champaign, 2016

Ward, Ronald G, Senior Lecturer
Computer Science & Engineering
PHD, Texas A&M University, 1973

Welch, Jennifer L, Professor
Computer Science & Engineering
PHD, Massachusetts Institute of Technology, 1988

Yum, Ki H, Senior Lecturer
Computer Science & Engineering
PHD, The Pennsylvania State University, 2002

Masters

- Master of Computer Science in Computer Science (p. 779)
- Master of Engineering in Computer Engineering (p. 767)
- Master of Science in Computer Engineering (p. 769)
- Master of Science in Computer Science (p. 781)

Doctoral

- Doctor of Philosophy in Computer Engineering (p. 773)
- Doctor of Philosophy in Computer Science (p. 785)

Master of Engineering in Computer Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

This program is approved to be offered in face-to-face and distance formats. The program is currently being offered in the on-campus option only.

Program Requirements

Program Requirements for On-Campus and Distance Education Degree Programs

- Student's Advisory Committee (p. 767)
- Degree Plan (p. 767)
- Credit Requirement (p. 768)
- Transfer of Credit (p. 768)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 768)
- Final Examination (p. 768)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by

the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in **which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the MEng Computer Engineering non-thesis option.

Additional Requirements

Additional Requirements for On-Campus and Distance Education Degree Programs

- Residence (p. 768)
- Time Limit (p. 769)
- Foreign Languages (p. 769)
- Internship or Practicum (p. 769)
- Application for Degree (p. 769)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Computer Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 770)
- Degree Plan (p. 770)
- Credit Requirements (p. 770)
- Transfer of Credit (p. 770)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 771)
- Thesis Option (p. 771)
 - Thesis Proposal (p. 771)
 - Final Examination/Thesis Defense (p. 772)
- Non-Thesis Option (p. 772)

Student's Advisory Committee

The Master of Science in Computer Science has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the

role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional

Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.

- Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate

and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee

member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Computer Science.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 772)
- Continuous Registration (p. 772)
- Time Limit (p. 773)
- Foreign Languages (p. 773)
- Application for Degree (p. 773)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98,

5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Computer Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete coursework detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 774)
- Degree Plan (p. 774)
- Transfer of Credit (p. 775)
- Research Proposal (p. 775)
- Examinations (p. 775)
 - Preliminary Examination (p. 775)
 - Preliminary Examination Format (p. 775)
 - Preliminary Examination Scheduling (p. 776)
 - Report of Preliminary Examination (p. 776)
 - Retake of Failed Preliminary Examination (p. 776)
 - Final Examination (p. 776)
 - Report of Final Examination (p. 777)
- Dissertation (p. 777)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 777)
- Time Limit (p. 778)
- Continuous Registration (p. 778)
- Admission to Candidacy (p. 778)
- Languages (p. 778)
- 99-Hour Cap on Doctoral Degree (p. 778)
- Application for Degree (p. 779)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Computer Science in Computer Science

The degree of **Master of Computer Science (MCS)** is a non-thesis degree, designed to complement the Master of Science degree in Computer Science. The degree requires the completion of a minimum of 30 hours of coursework.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 779)

Degree Plan (p. 779)

Credit Requirement (p. 779)

Transfer of Credit (p. 779)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 780)

Non-Thesis Option (p. 780)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student's advisory committee for the Master of Computer Science will consist of **the departmental graduate advisor**. **The graduate advisor will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee.** The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is

involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan and any professional study or project. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, after completion of 9 hours or the first semester, and no later than 90 days prior to the date of the final oral examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Computer Science degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from

the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 3 hours of 684 (Professional Internship) and/or
 - A maximum of 3 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 3 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.

11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

A final comprehensive examination is not required for the Master of Computer Science in Computer Science non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 780)
- Time Limit (p. 780)
- Foreign Languages (p. 780)
- Internship or Practicum (p. 780)
- Application for Degree (p. 781)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Computer Science degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Computer Science degree.

Internship or Practicum

A student who undertakes a professional internship must return to the campus. The request for exemption from final examination is not to be administered until all other requirements for the degree, including any internship, have been completed. Internship hours are in addition to the required 30 credit hours.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Computer Science

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 781)
- Degree Plan (p. 782)
- Credit Requirements (p. 782)
- Transfer of Credit (p. 782)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 783)
- Thesis Option (p. 783)
 - Thesis Proposal (p. 783)
 - Final Examination/Thesis Defense (p. 783)
- Non-Thesis Option (p. 784)

Student's Advisory Committee

The Master of Science in Computer Science has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate

faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed**

and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10**

working days in advance of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Computer Science.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

- Residence (p. 784)
- Continuous Registration (p. 784)
- Time Limit (p. 784)
- Foreign Languages (p. 784)
- Application for Degree (p. 784)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Computer Science

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 786)
- Degree Plan (p. 786)
- Transfer of Credit (p. 787)
- Research Proposal (p. 787)
- Examinations (p. 787)
 - Preliminary Examination (p. 787)
 - Preliminary Examination Format (p. 787)
 - Preliminary Examination Scheduling (p. 788)
 - Report of Preliminary Examination (p. 788)
 - Retake of Failed Preliminary Examination (p. 788)
 - Final Examination (p. 788)
 - Report of Final Examination (p. 789)
- Dissertation (p. 789)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 789)
- Time Limit (p. 790)
- Continuous Registration (p. 790)
- Admission to Candidacy (p. 790)
- Languages (p. 790)
- 99-Hour Cap on Doctoral Degree (p. 790)
- Application for Degree (p. 790)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Electrical and Computer Engineering

www.ece.tamu.edu

Head: M. Begovic

Graduate Advisor: S. Miller

The Department of Electrical and Computer Engineering offers programs for graduate study leading to the research-oriented Master of Science and Doctor of Philosophy degrees and to the professional Master of Engineering degree in Electrical and Computer Engineering. Courses in the department may also be applied to the interdisciplinary Doctor of Engineering degree. The MS and PhD programs provide specialization in-depth and include a research (thesis or dissertation) requirement. The

MEng and DEng programs are designed to provide the depth and breadth necessary for the practice of engineering at advanced levels.

Current areas of study include analog and mixed signal, biomedical imaging and genomic signal processing, computer engineering, electromagnetic and microwaves, electric power and power electronics, solid state electronics, photonics and nano-engineering, telecommunications, signal processing and controls. Interdisciplinary engineering programs are available in other areas.

Well equipped laboratories are available for work in all of these areas. Special laboratory facilities are available to graduate students in telecommunications, solid-state electronics, integrated circuit design, electromagnetics, microwave microelectronics, electrotropics, computer vision and electric power systems. The department has many workstations and high end PCs in general access laboratories and excellent computing facilities available in the individual research laboratories. The workstations are supported by a large Sun file servers and two computational servers, and the PCs are supported by a Novell network.

There is no foreign language requirement for the PhD or DEng programs in electrical and computer engineering.

Faculty

Annapareddy, Narasimha, Professor
Electrical & Computer Eng
PHD, University of Illinois at Urbana-Champaign, 1990

Balog Jr, Robert S, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois, 2006

Begovic, Miroslav M, Professor
Electrical & Computer Eng
PHD, Virginia Polytechnic Institute, 2014

Bhattacharyya, S P, Professor
Electrical & Computer Eng
PHD, Rice University, 1971

Braga Neto, Ulisses, Associate Professor
Electrical & Computer Eng
PHD, John Hopkins University, 2002

Butler-Purry, Karen L, Professor
Electrical & Computer Eng
PHD, Howard University, 1994

Cantrell Jr, Pierce E, Senior Associate Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 1981

Chamberland-Tremblay, Jean-Francois, Professor
Electrical & Computer Eng
PHD, University of Illinois, 2004

Choi, Seong G, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois, 1994

Datta, Aniruddha, Professor
Electrical & Computer Eng
PHD, University of Southern California, 1991

Davis, Katherine M, Assistant Professor
Electrical & Computer Eng
PHD, University of Illinois at Urbana-Champaign, 2011

Dougherty Jr, Edward R, Distinguished Professor
Electrical & Computer Eng
PHD, Rutgers State University of New Jersey, 1974

Duffield, Nicholas G, Professor
Electrical & Computer Eng
PHD, Queen Mary College, Univ. of London, 1987

Ehsani, Mehrdad, Professor
Electrical & Computer Eng
PHD, University of Wisconsin - madison, 1981

Eknoyan, Ohannes, Senior Professor
Electrical & Computer Eng
PHD, Columbia University, 1975

Enjeti, Prasad N, Professor
Electrical & Computer Eng
PHD, Concordia University, Montreal, 1984

Entesari, Kamran, Professor
Electrical & Computer Eng
PHD, University of Michigan, 2006

Georghiades, Costas N, Professor
Electrical & Computer Eng
PHD, Washington University in St. Louis, 1985

Gratz, Paul V, Associate Professor
Electrical & Computer Eng
PHD, University of Texas, 2008

Han, Arum, Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 2005

Harris, Harlan R, Associate Professor
Electrical & Computer Eng
PHD, Texas Tech University, 2003

Heidarzadeh, Anoosheh, Visiting Assistant Professor
Electrical & Computer Eng
PHD, Carleton University, 2012

Hemmer, Philip R, Professor
Electrical & Computer Eng
PHD, Massachusetts Inst of Technology, 1984

Hou, I-Hong, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois Urbana Champaign, 2011

Hoyos, Sebastian, Associate Professor
Electrical & Computer Eng
PHD, University of Delaware, 2004

Hu, Jiang, Professor
Electrical & Computer Eng
PHD, University of Minnesota, 2001

Huang, Garng M, Professor
Electrical & Computer Eng
PHD, Washington University in St. Louis, 1980

Ji, Jim X, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois, 2003

Kalafatis, Stavros, Professor of the Practice
Electrical & Computer Eng
MS, University of Arizona, 1991

Kameoka, Jun, Professor
Electrical & Computer Eng
PHD, Cornell University, 2002

Karsilayan, Aydin I, Associate Professor
Electrical & Computer Eng
PHD, Portland State University, 2000

Kezunovic, Mladen, Professor
Electrical & Computer Eng
PHD, University of Kansas, 1980

Khatri, Sunil P, Professor
Electrical & Computer Eng
PHD, University of California, Berkeley, 1999

Kish, Laszlo B, Professor
Electrical & Computer Eng
PHD, Uppsala University, Sweden, 1994

Kumar, Panganamala R, Distinguished Professor
Electrical & Computer Eng
PHD, Washington University in St. Louis, 1977

Li, Peng, Professor
Electrical & Computer Eng
PHD, Carnegie Mellon University, 2003

Lin, Paotai, Assistant Professor
Electrical & Computer Eng
PHD, Northwestern University, 2009

Liu, Tie, Professor
Electrical & Computer Eng
PHD, University of Illinois, 2006

Lu, Mi, Professor
Electrical & Computer Eng
PHD, Rice University, 1987

Lusher, John D, Associate Professor Of The Practice
Electrical & Computer Eng
PHD, Texas A&M University, 2018

Madsen, Christi K, Professor
Electrical & Computer Eng
PHD, Rutgers State University of New Jersey, 1996

Manisseri Kalathil, Dileep, Assistant Professor
Electrical & Computer Eng
PHD, University of California at Berkeley, 2014

Michalski, Krzysztof A, Associate Professor
Electrical & Computer Eng
PHD, University of Kentucky, 1981

Miller, Scott L, Professor
Electrical & Computer Eng
PHD, University of California, San Diego, 1988

Moreira-Tamayo, Oscar, Professor of the Practice
Electrical & Computer Eng
PHD, Texas A&M University, 1996

Narayanan, Krishna R, Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 1998

Nevels, Robert D, Professor
Electrical & Computer Eng
PHD, University of Mississippi, 1979

Nguyen, Cam Van, Professor
Electrical & Computer Eng
PHD, University of Central Florida, 1990

Nowka, Kevin J., Professor Of The Practice
Electrical & Computer Eng
PHD, Stanford University, 1995

Overbye, Thomas J, Professor
Electrical & Computer Eng
PHD, University of Wisconsin, 1991

Palermo, Samuel M, Associate Professor
Electrical & Computer Eng
PHD, Stanford University, 2007

Park, Hangu, Assistant Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 2017

Park, Sung I, Assistant Professor
Electrical & Computer Eng
PHD, Stanford University, 2014

Qian, Xiaoning, Associate Professor
Electrical & Computer Eng
PHD, Yale University, 2005

Rahimian, Mina M, Senior Lecturer
Electrical & Computer Eng
PHD, Texas A&M University, 2011

Rajendran, Jeyavijayan, Assistant Professor
Electrical & Computer Eng
PHD, New York University, 2015

Rentzepis, Peter M, Professor
Electrical & Computer Eng
PHD, University of Cambridge, 1963

Righetti, Raffaella, Associate Professor
Electrical & Computer Eng
PHD, University of Houston, 2005

Russell Jr, Billy D, Distinguished Professor
Electrical & Computer Eng
PHD, University of Oklahoma, 1975

Sanchez-Sinencio, Edgar, Distinguished Professor
Electrical & Computer Eng
PHD, University of Illinois, 1973

Savari, Serap A, Associate Professor
Electrical & Computer Eng
PHD, Massachusetts Inst of Technology, 1996

Serpedin, Erchin, Professor
Electrical & Computer Eng
PHD, University of Virginia, 1999

Shakkottai, Srinivas G, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois, 2007

Shen, Yang, Assistant Professor
Electrical & Computer Eng
PHD, Boston University, 2008

Shi, Weiping, Professor
Electrical & Computer Eng
PHD, University of Illinois, 1992

Silva-Martinez, Jose E, Professor
Electrical & Computer Eng
PHD, Katholieke Universiteit Leuven, 1992

Singh, Chanan, Professor
Electrical & Computer Eng
PHD, University of Saskatchewan, 1972

Sprintson, Alexander, Professor
Electrical & Computer Eng
PHD, Israel Institute of Technology, 2003

Tian, Chao, Associate Professor
Electrical & Computer Eng
PHD, Cornell University, 2005

Toliyat, Hamid A, Professor
Electrical & Computer Eng
PHD, University of Wisconsin - madison, 1991

Villareal, Samuel S, Senior Lecturer
Electrical & Computer Eng
PHD, Texas A&M University, 1999

Watson, Karan L, Senior Professor
Electrical & Computer Eng
PHD, Texas Tech University, 1982

Weichold, Mark H, Professor
Electrical & Computer Eng
PHD, Texas A&M University, 1983

Williams, Richard, Professor
Electrical & Computer Eng
PHD, University of California at Berkeley, 1978

Wright, Steven M, Professor
Electrical & Computer Eng
PHD, University of Illinois, 1984

Xie, Le, Professor
Electrical & Computer Eng
PHD, Carnegie Mellon University, 2009

Xiong, Zixiang, Professor
Electrical & Computer Eng
PHD, University of Illinois, 1996

Yoon, Byung-Jun, Associate Professor
Electrical & Computer Eng
PHD, California Institute of Technology, 2007

Zhang, Xi, Professor
Electrical & Computer Eng
PHD, University of Michigan, 2002

Zou, Jun, Professor
Electrical & Computer Eng
PHD, University of Illinois, 2002

Masters

- Master of Engineering in Computer Engineering (p. 793)
- Master of Engineering in Electrical Engineering (p. 805)
- Master of Science in Computer Engineering (p. 795)
- Master of Science in Electrical Engineering (p. 807)

Doctoral

- Doctor of Philosophy in Computer Engineering (p. 799)
- Doctor of Philosophy in Electrical Engineering (p. 811)

Certificates

- Analog and Mixed-Signal Integrated Circuit Design Certificate (p. 817)

Master of Engineering in Computer Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 794)
- Degree Plan (p. 794)
- Credit Requirement (p. 794)
- Transfer of Credit (p. 794)

- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 795)
- Final Examination (p. 795)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic

actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the MEng Computer Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 795)
- Time Limit (p. 795)
- Foreign Languages (p. 795)
- Internship or Practicum (p. 795)
- Application for Degree (p. 795)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Computer Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

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|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | <h3>Program Requirements</h3> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 796) • Degree Plan (p. 797) • Credit Requirements (p. 797) • Transfer of Credit (p. 797) • Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 797) • Thesis Option (p. 798) <ul style="list-style-type: none"> • Thesis Proposal (p. 798) • Final Examination/Thesis Defense (p. 798) • Non-Thesis Option (p. 799) | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | <h3>Student's Advisory Committee</h3> <p>The Master of Science in Computer Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.</p> <p>For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of no fewer than three members of the graduate faculty, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for students in an interdisciplinary program must have an</p> | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |

appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas

A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 4. A maximum of 2 hours of Seminar (681).
 5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 7. Continuing education courses may not be used for graduate credit.
 8. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote

by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Computer Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 799)
- Continuous Registration (p. 799)
- Time Limit (p. 799)
- Foreign Languages (p. 799)
- Application for Degree (p. 799)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Computer Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 801)
- Degree Plan (p. 801)
- Transfer of Credit (p. 801)
- Research Proposal (p. 802)
- Examinations (p. 802)
 - Preliminary Examination (p. 802)
 - Preliminary Examination Format (p. 802)
 - Preliminary Examination Scheduling (p. 802)

- Report of Preliminary Examination (p. 803)
- Retake of Failed Preliminary Examination (p. 803)
- Final Examination (p. 803)
- Report of Final Examination (p. 803)
- Dissertation (p. 804)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree.

Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 804)
- Time Limit (p. 804)
- Continuous Registration (p. 804)
- Admission to Candidacy (p. 804)
- Languages (p. 805)
- 99-Hour Cap on Doctoral Degree (p. 805)
- Application for Degree (p. 805)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Engineering in Electrical Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 805)
- Degree Plan (p. 806)
- Credit Requirement (p. 806)
- Transfer of Credit (p. 806)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 806)
- Final Examination (p. 807)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the

student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the MEng Electrical Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 807)
- Time Limit (p. 807)
- Foreign Languages (p. 807)
- Internship or Practicum (p. 807)
- Application for Degree (p. 807)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which

it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Electrical Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

- Thesis Option (p. 809)
 - Thesis Proposal (p. 810)
 - Final Examination/Thesis Defense (p. 810)
- Non-Thesis Option (p. 810)

Student's Advisory Committee

The Master of Science in Electrical Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 808)
- Degree Plan (p. 809)
- Credit Requirements (p. 809)
- Transfer of Credit (p. 809)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 809)

In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to

the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method,

significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to

published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Electrical Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 811)
- Continuous Registration (p. 811)
- Time Limit (p. 811)
- Foreign Languages (p. 811)
- Application for Degree (p. 811)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Electrical Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |

| | | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 812)
- Degree Plan (p. 813)
- Transfer of Credit (p. 813)
- Research Proposal (p. 813)
- Examinations (p. 814)
 - Preliminary Examination (p. 814)
 - Preliminary Examination Format (p. 814)
 - Preliminary Examination Scheduling (p. 814)
 - Report of Preliminary Examination (p. 814)
 - Retake of Failed Preliminary Examination (p. 815)
 - Final Examination (p. 815)
 - Report of Final Examination (p. 815)
- Dissertation (p. 815)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University

campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious

biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the

committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record**

of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After

commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 816)
- Time Limit (p. 816)
- Continuous Registration (p. 816)
- Admission to Candidacy (p. 816)
- Languages (p. 816)
- 99-Hour Cap on Doctoral Degree (p. 816)
- Application for Degree (p. 817)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per

semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Analog and Mixed-Signal Integrated Circuit Design - Certificate

The Department of Electrical and Computer Engineering offers an Analog and Mixed-Signal Integrated Circuit Design Certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------|-------------------------------------------|-----------------------|
| Required | | |
| ECEN 607 | Advanced Analog Circuit Design Techniques | 4 |
| ECEN 704 | VLSI Circuit Design | 4 |
| Electives | | |
| ECEN 610 | Mixed-Signal Interfaces | 6 |
| ECEN 620 | Network Theory | |
| ECEN 622 | Active Network Synthesis | |
| ECEN 720 | High-Speed Links Circuits and Systems | |
| ECEN 665 | Integrated CMOS RF Circuits and Systems | |

Total Semester Credit Hours

14

Department of Engineering Technology and Industrial Distribution

Head: R. Langari

The Department of Engineering Technology and Industrial Distribution offers graduate studies leading to the degrees of Master of Science in Engineering Technology (MSET), Master of Engineering Technical Management (METM) and Masters of Industrial Distribution (MID).

The MSET is a resident graduate program, while METM and MID are web-based, graduate programs. Enrollment in MID and METM classes are restricted to students who have been admitted to the MID program and METM program, respectively.

The MSET program of study is designed for individuals who desired to acquire advanced skills in the areas electronic systems, manufacturing, mechanical and mechatronics technologies.

<https://engineering.tamu.edu/etid/academics/degrees/graduate/ms-et.html>

The MID program of study has been designed for individuals with interest and/or background in industrial and high technology channels.

<http://id.tamu.edu/graduate/mid-program/program-overview>

The METM program of study has been designed to provide individuals with technical talents and business acumen.

<https://engineering.tamu.edu/etid/metm/index.html>

Faculty

Alvarado, Jorge L, Professor
Eng Tech & Ind Distribution
PHD, University of Illinois, 2004

Asadi, Amir, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Manitoba, 2013

Bosshard, John C, Lecturer
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2012

Buchanan, Walter W, Professor
Eng Tech & Ind Distribution
PHD, Indiana University, 1993

Capar, Ismail, Associate Professor
Eng Tech & Ind Distribution
PHD, Mississippi State University, 2007

Chang, Yanling, Assistant Professor
Eng Tech & Ind Distribution
PHD, Georgia Institute of Technology, 2015

Clark Jr, Norman L, Instructional Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2015

Fang, Gwo-Ping, Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1996

Fink, Klaus, Senior Lecturer
Eng Tech & Ind Distribution
PHD, Case Western Reserve University, 1995

Fink, Rainer J, Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1995

Geha, Chadi, Lecturer
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2015

Goulart, Ana E, Associate Professor
Eng Tech & Ind Distribution
PHD, Georgia Institute of Technology, 2005

Hsieh, Sheng-Jen, Professor
Eng Tech & Ind Distribution
PHD, Texas Tech University, 1995

Hung, Nguyen P, Associate Professor
Eng Tech & Ind Distribution
PHD, University of California, Berkeley, 1987

Hur, Byul, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Florida, 2011

Iakovou, Eleftherios, Professor
Eng Tech & Ind Distribution
PHD, Cornell University, 1992

Jennings, Daniel F, Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1986

Johnson, Michael D, Associate Professor
Eng Tech & Ind Distribution
PHD, Massachusetts Institute of Technology, 2004

KIM, Jeonghee, Assistant Professor
Eng Tech & Ind Distribution
PHD, Georgia Institute of Technology, 2018

Kebulis, Matthew F, Associate Professor
Eng Tech & Ind Distribution
PHD, University of Michigan, 1995

Kuttolamadom, Mathew A, Associate Professor
Eng Tech & Ind Distribution
PHD, Clemson University, 2012

Lawrence, Frederick B, Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1999

Leon, Victor J, Professor
Eng Tech & Ind Distribution
PHD, Lehigh University, 1991

Ma, Chao, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of California, 2015

Morgan, Joseph A, Senior Professor
Eng Tech & Ind Distribution
DEN, Texas A&M University, 1983

Nagarathnam, Bharani B, Instructional Assistant Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2016

Natarajarithnam, Malini, Associate Professor
Eng Tech & Ind Distribution
DOC, University of Alabama, 2007

Nepal, Bimal P, Associate Professor
Eng Tech & Ind Distribution
PHD, Wayne State University, 2005

Nie, Xiaofeng, Associate Professor
Eng Tech & Ind Distribution
PHD, University at Buffalo (SUNY), 2008

Obeidat, Suleiman M, Instructional Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Oklahoma, 2008

Porter, Jay R, Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1993

Price, Angie H, Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1999

Song, Xingyong, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Minnesota, Twin Cities, 2011

Wang, Jyhwen, Professor
Eng Tech & Ind Distribution
PHD, Northwestern University, 1991

Yang, Xiaomin, Senior Lecturer
Eng Tech & Ind Distribution
PHD, Purdue University, 2002

Zhan, Wei, Associate Professor
Eng Tech & Ind Distribution
PHD, Washington University in St. Louis, 1991

Zoghi, Behbood B, Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1993

Masters

- Master of Engineering Technical Management in Technical Management (p. 823)
- Master of Industrial Distribution in Industrial Distribution (p. 822)
- Master of Science in Engineering Technology (p. 819)

Master of Science in Engineering Technology

Head: Dr. Reza Langari

Graduate Advisor: Dr. V. Jorge Leon

The Engineering Technology and Industrial Distribution Department (ETID) offers a Master of Science in Engineering Technology (MSET) that provides advanced application-oriented education in engineering technology. This master's degree is the first resident graduate program in ETID allowing students to increase their knowledge in the fields of manufacturing and mechanical engineering technology, electronic systems engineering technology, and mechatronics engineering technology.

The MSET is a 3-semester resident program with a 30 credit-hour curriculum offering both a thesis and non-thesis option. The program is offered to non-engineering technology majors with appropriate backgrounds.

The need for a workforce with advanced technical talent can only continue to grow as the nature of work changes, impacted by the rapid pace of developments of critical technologies such as mobile internet, knowledge automation, internet-of-things, autonomous vehicle and additive manufacturing and other advanced technologies. The MSET degree allows students with a BS degree in related areas to achieve technological acumen beyond levels achieved during a bachelor's program.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 819)
- Degree Plan (p. 819)
- Credit Requirements (p. 820)
- Transfer of Credit (p. 820)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 820)
- Thesis Option (p. 820)
 - Thesis Proposal (p. 821)
 - Final Examination/Thesis Defense (p. 821)
- Non-Thesis Option (p. 821)

Student's Advisory Committee

The Master of Science in Engineering Technology has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MSET degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to**

a department other than the student's major department. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdpss.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Science degree. A minimum of 30 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science in Engineering Technology degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or

mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science in Engineering Technology degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Engineering Technology. A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

- Residence (p. 822)
- Continuous Registration (p. 822)
- Time Limit (p. 822)

- Foreign Languages (p. 822)
- Application for Degree (p. 822)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science in Engineering Technology, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science in Engineering Technology program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science in Engineering Technology degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Industrial Distribution in Industrial Distribution

The College of Engineering offers a graduate program leading to the degree of **Master of Industrial Distribution (MID)**. Enrollment in MID

classes is restricted to students who have been admitted to the MID program. The program of study has been designed for individuals within both manufacturing and industrial distribution companies.

The MID degree is a non-thesis degree for which a final oral examination is not required. The majority of MID courses are offered via web-based distance learning. New students are admitted in the fall semester only.

<http://id.tamu.edu/graduate/mid-program/program-overview/>

Program Requirements

Program Requirements

Student's Advisory Committee (p. 822)

Degree Plan (p. 822)

Credit Requirements (p. 822)

Transfer of Credit (p. 822)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 822)

Final Examination (p. 823)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the MID Program Office concerning program structure and requirements. The MID student's "committee" consists of the Director of the MID Program Office. The Director has the responsibility for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or by dates announced in the OGAPS calendar.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the MID Program Director to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Industrial Distribution degree.

Transfer of Credit

No transfer of credit is allowed for the Master of Industrial Distribution degree.

Limitations on the Use of Transfer, Extension and Certain Other Courses

1. No transfer credit is allowed.
2. A maximum of 12 credit hours of 685 (Directed Studies) may be used with the approval of the MID Program Director.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 3 hours of 689 (Special Topics) may be used with the approval of the MID Program Director.
5. A maximum of 3 hours of 693 (Professional Study) may be used with the approval of the MID Program Director.
6. Extension courses are not acceptable for credit.
7. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
8. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's program and approved by the Director of the Master of Industrial Distribution Program and the Office of Graduate and Professional Studies.

Final Examination

A final oral examination is not required for the Master of Industrial Distribution degree. Except as noted above, the requirements for the degree of Master of Industrial Distribution are identical with those for the degree of Master of Science.

Additional Requirements

Additional Requirements

- Residence (p. 823)
- Time Limit (p. 823)
- Scholastic Requirements (p. 823)
- Foreign Languages (p. 823)
- Application for Degree (p. 823)

Residence

A student must complete 6 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Industrial Distribution degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it was taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Scholastic Requirements

To maintain good academic standing, an MID student must maintain a minimum cumulative 3.000 GPR each semester. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to 3.000 or above by the end of the next 9 hours of coursework or within one calendar year, whichever comes first. If this requirement is not met, the MID Program Director will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MID program, he or she shall not be permitted to enroll in other MID courses.

An MID student must attain a minimum cumulative 3.000 GPR on MID core courses.

Foreign Languages

A foreign language is not required for the Master of Industrial Distribution degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Engineering Technical Management in Technical Management

The College of Engineering offers a graduate program leading to the degree of **Master of Engineering Technical Management (METM)**. The highly integrated METM curriculum is designed in close collaboration and involvement with our industry partners to keep the program relevant for workplace needs for technical talents with business acumen.

The METM degree is a distance education non-thesis degree for which a final oral examination is not required. The majority of METM courses are offered via web-based distance learning. New students are admitted in the fall semester only.

<https://engineering.tamu.edu/etid/metm/index.html>

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 823)
- Degree Plan (p. 824)
- Credit Requirement (p. 824)
- Transfer of Credit (p. 824)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 824)
- Final Examination (p. 824)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the Master of Engineering Technical Management Program Office concerning program structure and requirements. The Master of Engineering Technical Management student's "committee" consists of the Director of the Master of Engineering Technical Management Program Office. The Director has the responsibility for counseling the student on academic matters, and, in the

case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or by dates announced in the OGAPS calendar.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the Master of Engineering Technical Management Program Director to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering Technical Management degree.

Transfer of Credit

No transfer of credit is allowed for the Master of Engineering Technical Management degree.

Limitations on the Use of Transfer, Extension and Certain Other Courses

1. No transfer credit is allowed.
2. A maximum of 12 credit hours of 685 (Directed Studies) may be used with the approval of the METM Program Director.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 3 hours of 689 (Special Topics) may be used with the approval of the METM Program Director.
5. A maximum of 3 hours of 693 (Professional Study) may be used with the approval of the METM Program Director.
6. Extension courses are not acceptable for credit.
7. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
8. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's program and approved by the Director of the Master of Engineering Technical Management Program and the Office of Graduate and Professional Studies.

Final Examination

A final oral examination is not required for the Master of Engineering Technical Management degree. Except as noted above, the requirements for the degree of Master of Engineering Technical Management are identical with those for the degree of Master of Science.

Additional Requirements

Additional Requirements

Residence (p. 824)
 Time Limit (p. 824)
 Scholastic Requirements (p. 824)
 Foreign Languages (p. 824)
 Application for Degree (p. 825)

Residence

A student must complete 6 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Engineering Technical Management.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it was taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Scholastic Requirements

To maintain good academic standing, an METM student must maintain a minimum cumulative 3.000 GPR each semester. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to 3.000 or above by the end of the next 9 hours of coursework or within one calendar year, whichever comes first. If this requirement is not met, the METM Program Director will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the METM program, he or she shall not be permitted to enroll in other METM courses.

An METM student must attain a minimum cumulative 3.000 GPR on METM core courses.

Foreign Languages

A foreign language is not required for the Master of Engineering Technical Management degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Department of Industrial and Systems Engineering

<http://engineering.tamu.edu/industrial>

Head: M. Lawley

Graduate Advisor: A. Garcia

The department offers Master of Science (MS), Master of Engineering (MEng) and Doctor of Philosophy (PhD) degrees in industrial engineering and a Master of Science (MS in Engineering Systems Management). Facilities for study and research are excellent, and participation in research is an integral part of the PhD program.

Departmental faculty working in diverse areas of industrial engineering provide students with a wide range of opportunities to gain valuable research experience. Faculty members are presently involved in research in applied statistical analysis, mathematical optimization, stochastic processes, production and inventory control, manufacturing processes and system organization, networks, systems simulation, manufacturing system analysis, quality and reliability engineering, human factors and cognitive ergonomics, transportation systems and logistics.

There is no foreign language requirement for the PhD in industrial engineering. Students in the industrial engineering PhD program are required to pass a departmental qualifying exam within three semesters of starting the program, and all students are required to maintain a GPA of 3.00 in order to remain in good academic standing and graduate. PhD students must also have a 3.0 GPA in order to meet the Preliminary Exam and the Final Exam requirements toward their degree.

Faculty

Aprahamian, Hrayr, Assistant Professor
Industrial & Systems Eng
PHD, Virginia Tech, 2018

Banerjee, Amarnath P, Professor
Industrial & Systems Eng
PHD, University of Illinois at Chicago, 1999

Benden, Mark E, Associate Professor
Industrial & Systems Eng
PHD, Texas A&M University, 2006

Bennett Jr, George K, Senior Professor
Industrial & Systems Eng
PHD, Texas Tech University, 1970

Bukkapatnam, Satish T, Professor
Industrial & Systems Eng
PHD, Pennsylvania State University, 1997

Butenko, Sergiy I, Professor
Industrial & Systems Eng
PHD, University of Florida, 2003

Currie-Gregg, Nancy J, Professor of the Practice
Industrial & Systems Eng
PHD, University of Houston, 1997

Curry, Guy L, Senior Professor
Industrial & Systems Eng
PHD, University of Arkansas, 1971

Ding, Yu, Professor
Industrial & Systems Eng
PHD, University of Michigan, 2001

Eksin, Ceyhun, Assistant Professor
Industrial & Systems Eng
PHD, University of Pennsylvania, 2015

Elwany, Alaa Mohamed H, Assistant Professor
Industrial & Systems Eng
PHD, Georgia Institute of Technology, 2009

Erraguntla, Madhav, Associate Professor of the Practice
Industrial & Systems Eng
PHD, Texas A&M University, 1996

Feldman, Richard M, Senior Professor
Industrial & Systems Eng
PHD, Northwestern University, 1975

Ferris, Thomas K, Associate Professor
Industrial & Systems Eng
PHD, University of Michigan - Ann Arbor, 2010

Garcia, Alfredo A, Professor
Industrial & Systems Eng
PHD, University of Michigan, 1997

Gautam, Natarajan, Professor
Industrial & Systems Eng
PHD, University of North Carolina at Chapel Hill, 1997

Geunes, Joseph P, Professor
Industrial & Systems Eng
PHD, Pennsylvania State University, 1999

Graul, Michael H, Associate Professor of the Practice
Industrial & Systems Eng
PHD, Texas A&M University, 1995

Graves, Gregory H, Professor of Practice
Industrial & Systems Eng
PHD, Texas A&M University, 2006

Johnson, Andrew L, Associate Professor
Industrial & Systems Eng
PHD, Georgia Institute of Technology, 2006

Kianfar, Kiavash, Associate Professor
Industrial & Systems Eng
PHD, North Carolina State University, 2007

Koppa, Rodger J, Senior Associate Professor
Industrial & Systems Eng
PHD, Texas A&M University, 1979

Kum, Hye Chung, Associate Professor
Industrial & Systems Eng
PHD, University of North Carolina - Chapel Hill, 2004

Kumar, Panganamala R, Professor
Industrial & Systems Eng
PHD, Washington University in St. Louis, 1977

Lawley, Mark A, Department Head and Professor
Industrial & Systems Eng
PHD, University of Illinois at Urbana-Champaign, 1995

Leon, Victor J, Professor
Industrial & Systems Eng
PHD, Lehigh University, 1991

Malave, Ceasar, Professor
Industrial & Systems Eng
PHD, University of South Florida, 1987

Mayer, Richard John, Adjunct Professor
Industrial & Systems Eng
DOC, Texas A&M University, 1998

McDonald, Anthony D, Assistant Professor
Industrial & Systems Eng
PHD, University of Wisconsin - Madison, 2014

Mehta, Ranjana K, Associate Professor
Industrial & Systems Eng
PHD, Virginia Tech, 2011

Momcilovic, Petar, Associate Professor
Industrial & Systems Eng
PHD, Columbia University, 2003

Moreno Centeno, Erick, Associate Professor
Industrial & Systems Eng
PHD, University of California, Berkeley, 2010

Ntaimo, Lewis, Professor
Industrial & Systems Eng
PHD, University of Arizona, 2004

Pei, Zhijian, Professor
Industrial & Systems Eng
PHD, University of Illinois, 1995

Peres, S Camille, Assistant Professor
Industrial & Systems Eng
PHD, Rice University, 2005

Pickens, Adam W, Assistant Professor
Industrial & Systems Eng
PHD, Texas Tech University, 2008

Sagapuram, Dinakar, Assistant Professor
Industrial & Systems Eng
PHD, Purdue University, 2013

Sasangohar, Farzan, Assistant Professor
Industrial & Systems Eng
PHD, University of Toronto, 2015

Shahrampour, Shahin, Assistant Professor
Industrial & Systems Eng
PHD, University of Pennsylvania, 2015

Smith, Donald R, Senior Associate Professor
Industrial & Systems Eng
PHD, University of Arkansas, 1973

Tuo, Rui, Assistant Professor
Industrial & Systems Eng
PHD, Chinese Academy of Sciences, 2013

Valdez Flores, Ciriaco, Professor of the Practice
Industrial & Systems Eng
PHD, Texas A&M University, 1987

Wang, Shiren, Associate Professor
Industrial & Systems Eng
PHD, Florida State University, 2006

Wang, Yen J, Instructional Assistant Professor
Industrial & Systems Eng
DEN, Northwestern University, 1991

Wortman, Martin A, Senior Professor
Industrial & Systems Eng
PHD, Virginia Tech, 1988

Zahabi, Maryam, Assistant Professor
Industrial & Systems Eng
PHD, North Carolina State University, 2017

Zeng, Li, Assistant Professor
Industrial & Systems Eng
PHD, University of Wisconsin, Madison, 2009

Zhang, Xudong, Professor
Industrial & Systems Eng
PHD, University of Michigan Ann Arbor, 1997

Zou, Na, Instructional Assistant Professor
Industrial & Systems Eng
PHD, Arizona State University, 2015

Masters

- Master of Engineering in Industrial Engineering (p. 831)
- Master of Science in Engineering Systems Management (p. 826)
- Master of Science in Industrial Engineering (p. 833)

Doctoral

- Doctor of Philosophy in Industrial Engineering (p. 837)

Certificates

- Industrial Data Analytics Certificate (p. 843)

Master of Science in Engineering Systems Management

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 827)
- Degree Plan (p. 828)
- Credit Requirements (p. 828)
- Transfer of Credit (p. 828)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 828)
- Thesis Option (p. 829)
 - Thesis Proposal (p. 829)
 - Final Examination (p. 829)
- Non-Thesis Option (p. 830)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Science in Engineering Systems Management has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the thesis option master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department, and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee. The student's

advisory committee for the non-thesis option master's degree will consist of only the chair.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 5V98, 5V99, 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 5V98, 5V99, and 691 (research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

On-Campus and Distance Education Degree Programs

A thesis option student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English Language Proficiency requirements must be satisfied prior to scheduling

the examination. An approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination.

Examinations which are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

The final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. The student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a thesis is not required. A final comprehensive examination is not required.

A student pursuing the non-thesis option is not allowed to enroll in 5V98, 5V99, or 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 3 credit hours of 685 (Directed Studies), 3 credit hours of 692 (Professional Project), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science

degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 830)
- Continuous Registration (p. 830)
- Time Limit (p. 830)
- Foreign Languages (p. 831)
- Application for Degree (p. 831)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a

petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Engineering in Industrial Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 831)
- Degree Plan (p. 831)
- Credit Requirement (p. 831)
- Transfer of Credit (p. 832)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 832)
- Final Examination (p. 832)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the MEng Industrial Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 832)
- Time Limit (p. 833)
- Foreign Languages (p. 833)
- Internship or Practicum (p. 833)
- Application for Degree (p. 833)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Industrial Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 834)
- Degree Plan (p. 834)
- Credit Requirements (p. 835)
- Transfer of Credit (p. 835)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 835)
- Thesis Option (p. 835)
 - Thesis Proposal (p. 836)
 - Final Examination (p. 836)
- Non-Thesis Option (p. 836)

Student's Advisory Committee

The Master of Science in Industrial Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the thesis option master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department, and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee. The student's advisory committee for the non-thesis option master's degree will consist of only the chair.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the

committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 5V98, 5V99, 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 5V98, 5V99, and 691 (research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A thesis option student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English Language Proficiency requirements must be satisfied prior to scheduling the examination. An approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. Examinations which are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

The final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee

in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. The student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

Non-Thesis Option

For non-thesis option students, a thesis is not required. A final comprehensive examination is not required.

A student pursuing the non-thesis option is not allowed to enroll in 5V98, 5V99, or 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 3 credit hours of 685 (Directed Studies), 3 credit hours of 692 (Professional Project), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 836)
- Continuous Registration (p. 837)
- Time Limit (p. 837)
- Foreign Languages (p. 837)
- Application for Degree (p. 837)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if

appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Industrial Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the

degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 838)
- Degree Plan (p. 838)
- Transfer of Credit (p. 839)
- Research Proposal (p. 839)
- Examinations (p. 839)
 - Preliminary Examination (p. 839)
 - Preliminary Examination Format (p. 839)
 - Preliminary Examination Scheduling (p. 840)

- Report of Preliminary Examination (p. 840)
- Retake of Failed Preliminary Examination (p. 840)
- Final Examination (p. 841)
- Report of Final Examination (p. 841)
- Dissertation (p. 841)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 841)
- Time Limit (p. 842)
- Continuous Registration (p. 842)
- Admission to Candidacy (p. 842)
- Languages (p. 842)
- 99-Hour Cap on Doctoral Degree (p. 842)
- Application for Degree (p. 843)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Industrial Data Analytics - Certificate

The Department of Industrial and Systems Engineering offers a Certificate of Industrial Data Analytics.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|-----------------------------------------------|-----------------------|
| ISEN 613 | Engineering Data Analysis | 3 |
| ISEN 614 | Advanced Quality Control | 3 |
| ISEN 616 | Design and Analysis of Industrial Experiments | 3 |
| ISEN 625 | Simulation Methods and Applications | 3 |
| Total Semester Credit Hours | | 12 |

Department of Materials Science and Engineering

<http://engineering.tamu.edu/materials>

Head: I. Karaman

Director, Graduate Program: M. Demkowicz

The Department of Materials Science and Engineering curriculum is designed to provide advanced training for careers in the rapidly growing materials industry, national laboratories and academic (research and teaching) environments. The curriculum consists of core courses and technical electives, both of which are designed to complement practical application with a strong foundation of underlying theory. Research thrusts include advanced structural materials; materials for extreme environments; nanostructured materials, including thin films; multifunctional materials and composites; corrosion; polymers, including composites and nanocomposites; ceramics; computational materials science and engineering; and energy materials.

To review additional courses in the MSEN curriculum, refer to Designated Electives (<https://engineering.tamu.edu/materials/academics/designated-electives>).

Faculty

Akbulut, Mustafa, Associate Professor
Materials Science & Engr
PHD, University of California, Santa Barbara, 2007

Alge, Daniel L, Assistant Professor
Materials Science & Engr
PHD, Purdue University, 2010

Arroyave, Raymundo, Professor
Materials Science & Engr
PHD, Massachusetts Inst of Technology, 2004

Asadi, Amir, Assistant Professor
Materials Science & Engr
PHD, University of Manitoba, 2013

Atli, Kadri Can, Research Assistant Professor
Materials Science & Engr
PHD, Texas A&M University, 2011

Balbuena, Perla B, Professor
Materials Science & Engr
PHD, University of Texas, 1996

Banerjee, Sarbajit, Professor
Materials Science & Engr
PHD, State University of New York at Stony Brook, 2004

Batteas, James D, Professor
Materials Science & Engr
PHD, University of California, Berkeley, 1995

Bazzi, Hassan, Professor
Materials Science & Engr
PHD, McGill University, 2003

Benzerga, Amine A, Professor
Materials Science & Engr
PHD, Ecole Nationale Supérieure Des Mines De Paris, 2000

Cagin, Tahir, Professor
Materials Science & Engr
PHD, Clemson University, 1988

Case, Raymundo P, Professor of the Practice
Materials Science & Engr
PHD, University of Manchester Institute of Science and Technology, 2002

Castaneda-Lopez, Homero, Associate Professor
Materials Science & Engr
PHD, Penn State University, 2001

Cheng, Zheng Dong, Professor
Materials Science & Engr
PHD, Princeton University, 1999

Creasy, Terry S, Associate Professor
Materials Science & Engr
PHD, University of Delaware, 1997

Demkowicz, Michal J, Associate Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2005

Elabd, Yossef A, Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2001

Elwany, Alaa Mohamed, Assistant Professor
Materials Science & Engr
PHD, Georgia Institute of Technology, 2009

Fang, Lei, Assistant Professor
Materials Science & Engr
PHD, Northwestern University, 2010

Gaharwar, Akhilesh K, Assistant Professor
Materials Science & Engr
PHD, Purdue University, 2011

Grasley, Zachary C, Professor
Materials Science & Engr
PHD, University of Illinois Urbana Champaign, 2006

Green, Micah, Associate Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2007

Grunlan, Jaime C, Professor
Materials Science & Engr
PHD, University of Minnesota, 2001

Grunlan, Melissa A, Professor
Materials Science & Engr
PHD, University of South Carolina, 2004

Guo, Bing, Assistant Professor
Materials Science & Engr
PHD, Tsinghua University, China, 1998

Harris, Harlan R, Associate Professor
Materials Science & Engr
PHD, Texas Tech University, 2003

Hartwig, Karl T, Emeritus Professor
Materials Science & Engr
PHD, University of Wisconsin - madison, 1977

Hemmer, Philip R, Professor
Materials Science & Engr
PHD, Massachusetts Inst of Technology, 1984

Hipwell, M Cynthia, TEES Eminent Professor
Materials Science & Engr
PHD, University of California-Berkeley, 1996

Hwang, Wonmuk, Associate Professor
Materials Science & Engr
PHD, Boston University, 2001

Jeong, Hae-Kwon, Associate Professor
Materials Science & Engr
PHD, University of Minnesota, 2004

Kameoka, Jun, Professor
Materials Science & Engr
PHD, Cornell University, 2002

Kane, Matthew H, Associate Professor
Materials Science & Engr
PHD, Georgia Institute of Technology, 2007

Karaman, Ibrahim, Professor
Materials Science & Engr
PHD, University of Illinois - Urbana-Champaign, 2000

Kuo, Chun Hsin, TEES Associate Research Scientist
Materials Science & Engr
PHD, University of Birmingham, 2010

Kuo, Yue, Associate Professor
Materials Science & Engr
PHD, Columbia University, 1980

Kuttolamadom, Mathew A, Assistant Professor
Materials Science & Engr
PHD, Clemson University, 2012

Lagoudas, Dimitris C, Professor
Materials Science & Engr
PHD, Lehigh University, 1986

Le Graverend, Jean-Briac B, Associate Professor
Materials Science & Engr
PHD, Ecole Nationale de Mécanique et d'Aérotechnique, France, 2013

Liang, Hong, Professor
Materials Science & Engr
PHD, Stevens Institute of Technology, 1992

Lin, Paotai, Assistant Professor
Materials Science & Engr
PHD, Northwestern University, 2009

Lutkenhaus, Jodie, Associate Professor
Materials Science & Engr
PHD, University of Notre Dame, 2003

Ma, Chao, Assistant Professor
Materials Science & Engr
PHD, University of California, 2015

Madsen, Christi K, Professor
Materials Science & Engr
PHD, Rutgers State University of New Jersey, 1996

Mansoor, Bilal, Assistant Professor
Materials Science & Engr
PHD, University of Michigan, 2010

McDeavitt, Sean M, Associate Professor
Materials Science & Engr
PHD, Purdue University, 1992

McShane II, Michael J, Professor
Materials Science & Engr
PHD, Texas A&M University, 1999

Michaudel, Quentin, Assistant Professor
Materials Science & Engr
PHD, The Scripps Research Institute, 2015

Naraghi, Mohammad, Assistant Professor
Materials Science & Engr
PHD, University of Illinois at Urbana Champaign, 2009

Naugle, Donald G, Professor
Materials Science & Engr
PHD, Texas A&M University, 1965

Needleman, Alan, Distinguished Professor
Materials Science & Engr
PHD, Harvard University, 1971

Nyakiti, Luke O, Assistant Professor
Materials Science & Engr
PHD, Texas Tech University, 2008

Ozmetin, Ali E, Research Assistant Professor
Materials Science & Engr
PHD, Texas A&M University, 2009

Pharr IV, George M, Professor
Materials Science & Engr
PHD, Stanford University, 1979

Pharr, George, Assistant Professor
Materials Science & Engr
PHD, Harvard University, 2014

Qian, Xiaofeng, Assistant Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2008

Radovic, Miladin, Professor
Materials Science & Engr
PHD, Drexel University, 2001

Reddy, Junuthula, Professor
Materials Science & Engr
PHD, University of Alabama at Huntsville, 1974

Ross Jr, Joseph H, Professor
Materials Science & Engr
PHD, University of Illinois at Urbana-Champaign, 1986

Seminario, Jorge M, Professor
Materials Science & Engr
PHD, Southern Illinois University Carbondale, 1987

Shamberger, Patrick J, Assistant Professor
Materials Science & Engr
PHD, University of Washington, 2010

Shao, Lin, Professor
Materials Science & Engr
PHD, University of Houston, 2001

Sheldon, Matthew T, Assistant Professor
Materials Science & Engr
PHD, University of California, Berkeley, 2010

Srivastava, Ankit, Assistant Professor
Materials Science & Engr
PHD, University of North Texas, 2013

Su, Hung-Jue, Professor
Materials Science & Engr
PHD, University of Michigan - Ann Arbor, 1988

Sukhishvili, Svetlana A, Professor
Materials Science & Engr
PHD, Lomonosov Moscow State University, 1989

Talreja, Ramesh R, Professor
Materials Science & Engr
PHD, The Technical University of Denmark, 1974

Teizer, Winfried, Associate Professor
Materials Science & Engr
PHD, University of Massachusetts - Amherst, 1998

Thomas, Edwin L, Visiting Professor
Materials Science & Engr
PHD, Cornell, 2018

Vaddiraju, Sreeram, Associate Professor
Materials Science & Engr
PHD, University of Louisville, 2006

Wang, Jyhwen, Professor
Materials Science & Engr
PHD, Northwestern University, 1991

Wang, Shiren, Associate Professor
Materials Science & Engr
PHD, Florida State University, 2006

Whitcomb, John D, Professor
Materials Science & Engr
PHD, Virginia Tech, 1988

Wilkerson, Justin, Assistant Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2014

Wong, Zi Jing, Assistant Professor
Materials Science & Engr
PHD, University of California, Berkeley, 2015

Wooley, Karen L, Professor
Materials Science & Engr
PHD, Cornell University, 1993

Wu, Wenhao, Associate Professor
Materials Science & Engr
PHD, University of Chicago, 1992

Xie, Yu Xuan, Assistant Professor
Materials Science & Engr
PHD, University of Sydney, 2013

Yu, Choongho, Associate Professor
Materials Science & Engr
PHD, University of Texas - Austin, 2004

Zhou, Hongcai J, Professor
Materials Science & Engr
PHD, Texas A&M University, 2000

Masters

- Master of Engineering in Materials Science and Engineering (p. 846)
- Master of Science in Materials Science and Engineering (p. 848)

Doctoral

- Doctor of Philosophy in Materials Science and Engineering (p. 852)

Certificates

- Corrosion Science and Engineering Certificate (p. 857)
- Materials, Informatics and Design Certificate (p. 858)

Master of Engineering in Materials Science and Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 846)
- Degree Plan (p. 846)
- Credit Requirement (p. 846)
- Transfer of Credit (p. 846)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 847)
- Final Examination (p. 847)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily

separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for**

transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the MEng Materials Science and Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 847)
- Time Limit (p. 847)
- Foreign Languages (p. 847)
- Internship or Practicum (p. 847)
- Application for Degree (p. 848)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Materials Science and Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 848)
- Degree Plan (p. 849)
- Credit Requirements (p. 849)
- Transfer of Credit (p. 849)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 850)
- Thesis Option (p. 850)
 - Thesis Proposal (p. 850)
 - Final Examination/Thesis Defense (p. 850)
- Non-Thesis Option (p. 851)

Student's Advisory Committee

The Master of Science in Materials Science and Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate

faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed**

and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U**

for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Materials Science and Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 851)
- Continuous Registration (p. 851)
- Time Limit (p. 851)
- Foreign Languages (p. 852)
- Application for Degree (p. 852)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Material Science and Engineering

The doctoral program in the Department of Materials Science and Engineering at Texas A&M University is a research intensive program designed to prepare engineers to enter careers in industry, government, or academia. A custom coursework plan is created for each student based on their goals, interests, and current expertise and knowledge to best prepare them for their desired career path.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 853)
- Degree Plan (p. 853)
- Transfer of Credit (p. 854)
- Research Proposal (p. 854)
- Examinations (p. 854)
 - Preliminary Examination (p. 854)
 - Preliminary Examination Format (p. 854)
 - Preliminary Examination Scheduling (p. 855)
 - Report of Preliminary Examination (p. 855)
 - Retake of Failed Preliminary Examination (p. 855)
 - Final Examination (p. 855)
 - Report of Final Examination (p. 856)
- Dissertation (p. 856)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 856)
- Time Limit (p. 857)
- Continuous Registration (p. 857)
- Admission to Candidacy (p. 857)
- Languages (p. 857)
- 99-Hour Cap on Doctoral Degree (p. 857)
- Application for Degree (p. 857)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Corrosion Science and Engineering - Certificate

The Corrosion Science and Engineering Certificate addresses the need to educate and train science and engineering students to develop methods and technologies to characterize and assess materials performance in extreme and corrosive environments to meet technological and scientific challenges in applications critical for our society.

Designed in response to industry demand and the national need in strategic sectors, such as infrastructure renewal, energy (extraction, conversion and transportation), utilities (in particular water), transportation, production and manufacturing. The certificate curriculum incorporates

1. cross-disciplinary components on materials science and engineering, thermodynamics, kinetics, and electrochemistry;

- interdisciplinary, integrative courses on the forms of corrosion, the electrochemical and degradation processes in extreme environments, and the control and mitigation strategies to prevent these processes in specific environments; and
- elective courses related to different engineering disciplines and applications as well as professional internships in industry and national laboratories.

The goals of the corrosion science and engineering certificate program are to train the next generation of scientists and engineers:

- who will serve as a trained, advanced workforce for industry, academia, and government agencies with a basic understanding of environmental degradation assets required to optimize asset life cycle, production efficiency, and worker safety;
- are familiar with the technological and computational tools and methods for corrosion and material degradation evaluation, inspection, detection, and prevention;
- have interdisciplinary collaborative experience in materials preservation and degradation, with individuals from different science and engineering disciplines;
- contribute to interdisciplinary efforts while developing a comprehensive understanding of the potentials and limitations of corrosion science and engineering; and
- acquire skills necessary to thrive in their chosen career path.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|------------------------------------------------|-----------------------|
| MSEN 601 | Fundamental Materials Science and Engineering | 3 |
| MSEN 643 | Materials Electrochemistry and Corrosion | 3 |
| MSEN 644 | Corrosion and Electrochemistry Lab | 3 |
| MSEN 646 | Corrosion Prevention and Control Methods | 3 |
| Select one of the following: | | 3 |
| BMEN 635 | Biomaterials Compatibility | |
| CHEM 623 | Surface Chemistry | |
| CHEN 655/ SENG 655 | Process Safety Engineering | |
| MEEN 660 | Corrosion Engineering | |
| MEMA 611 | Fundamentals of Engineering Fracture Mechanics | |
| MSEN 602 | Physics of Materials | |
| MSEN 603 | Fundamentals of Soft and Biomaterials | |
| MSEN 616/ MEEN 616 | Surface Science | |
| MSEN 620/ MEEN 620 | Kinetic Processes in Materials Science | |
| MSEN 625/ MEEN 625 | Mechanical Behavior of Materials | |
| MSEN 640 | Thermodynamics in Materials Science | |
| NUEN 662 | Nuclear Materials Under Extreme Conditions | |

PETE 643 Oil Field Chemistry

Total Semester Credit Hours 15

Materials, Informatics and Design - Certificate

The Department of Materials Science and Engineering offers a Materials, Informatics and Design Certificate.

The certificate addresses the need to develop approaches for the accelerated discovery and design of materials to meet technological challenges of the 21st century associated with environmental, national security, energy and medical issues.

This program provides an interdisciplinary framework to employ informatics and engineering system design tools to the development of materials. The curriculum includes (i) cross-disciplinary components on materials science, informatics and design; (ii) an interdisciplinary, integrative studio course on the application of informatics and design tools to develop materials; (iii) elective tracks on entrepreneurship, energy, computational materials science as well as professional internships in industry and national laboratories.

The educational goals of the certificate program are to train the next generation of scientists and engineers who:

- are grounded in their major discipline (degree program);
- are capable of applying tools and methods from other disciplines to their major discipline;
- are able to translate tools developed in their major discipline to engineering problems in other fields;
- can communicate with experts in varying disciplines;
- can effectively contribute to interdisciplinary efforts while developing a comprehensive understanding of the potentials and limitations of their major discipline as well as other disciplines;
- have the skills necessary to thrive in their chosen career path.

Program Requirements

| Code | Title | Semester Credit Hours |
|--------------------------------------------------------------------------|--------------------------------------------|-----------------------|
| MEEN 601 | Advanced Product Design | 3 |
| or MEEN 683 or Multidisciplinary System Analysis and Design Optimization | | |
| MSEN 655 | Materials Design Studio | 3 |
| MSEN 659 | Materials Design ePortfolio | 0 |
| MSEN 660/ ECEN 769 | Materials Informatics | 3 |
| Select one of the following: | | 3 |
| CHEM 466 | Polymer Chemistry | |
| CHEM 468 | Materials Chemistry of Inorganic Materials | |
| CHEM 623 | Surface Chemistry | |
| CHEN 641 | Polymer Engineering | |
| CHEN 642 | Colloidal and Interfacial Systems | |
| MEEN 607/ MSEN 607 | Polymer Physical Properties | |
| MEEN 610 | Applied Polymer Science | |

| | | |
|------------------------------|--------------------------------------------------------------------------|----|
| MSEN 601 | Fundamental Materials Science and Engineering | |
| MSEN 603 | Fundamentals of Soft and Biomaterials | |
| MSEN 618/ MEEN 686 | Composite Materials Processing and Performance | |
| PHYS 617 | Physics of the Solid State | |
| Select one of the following: | | 3 |
| CHEM 483 | Green Chemistry | |
| CHEM 658 | Molecular Modeling | |
| CHEM 684 | Professional Internship | |
| CHEN 459 | Gas and Petroleum Processing | |
| CHEN 665 | Sustainable Design of Chemical Processes | |
| CHEN 684 | Professional Internship | |
| ECEN 684 | Professional Internship | |
| ECEN 711 | Sustainable Energy and Vehicle Engineering | |
| ECEN 712 | Power Electronics for Photovoltaic Energy Systems | |
| ECEN 715 | Physical and Economical Operations of Sustainable Energy Systems | |
| ENGR 681 | Professional Development Seminar | |
| MEEN 633 | Combustion Science and Engineering | |
| MEEN 647 | Fundamentals of Energy Storage | |
| MEEN 662 | Energy Management in Industry | |
| MEEN 665 | Application of Energy Management | |
| MEEN 684 | Professional Internship | |
| MGMT 632 | Technology Commercialization | |
| MGMT 637 | Foundations of Entrepreneurship | |
| MGMT 640 | Managing for Creativity and Innovation | |
| MSEN 619 | Materials Modeling of Phase Transformation and Microstructural Evolution | |
| MSEN 657 | Multiscale Modeling in Materials | |
| MSEN 670 | Computational Materials Science and Engineering | |
| MSEN 684 | Professional Internship | |
| PHYS 619 | Modern Computational Physics | |
| Total Semester Credit Hours | | 15 |

Department of Mechanical Engineering

<http://engineering.tamu.edu/mechanical>

Head: A. A. Polycarpou

The graduate program in mechanical engineering is designed to offer a choice in curriculum depending upon career objectives. Students interested in leading edge research, teaching, creating new knowledge, or some combination of those activities may follow the Master of Science and Doctor of Philosophy route. Those interested in practicing

engineering at an advanced level in government or industry may pursue the Master of Engineering in Mechanical Engineering. This degree is offered in those areas of mechanical engineering which have a prescribed plan of study on file in the department. Courses are provided to enable each student to tailor an individual program consistent with a degree choice.

Each mechanical engineering graduate course is designed to provide a clear presentation of the underlying principles and theories essential to an understanding of the subject. Analytical and experimental techniques are described when required to apply the subject material to modern problems facing the engineers of today. In many cases, the course material supplements active research in mechanical engineering areas currently conducted at Texas A&M and other prominent research centers around the world. Active research facilities are available for advanced manufacturing, biomechanics, design, plastics engineering, artificial intelligence, robotics, non-destructive testing, fracture testing, metallurgical studies, experimental stress analysis, vibrations and rotating machinery, turbomachinery, fluid dynamics, power generation, combustion, in situ lignite gasification, heat transfer, energy management, corrosion, solar energy and wind tunnel studies.

There is no foreign language requirement for the PhD program in mechanical engineering. Each student, with the advice of his or her chosen advisory committee, selects courses to develop a strength in an area of specialization composed of the following mechanical engineering subgroups: thermal science, fluid mechanics, solid mechanics, materials science and mechanical systems.

Faculty

Allaire, Douglas L, Assistant Professor
Mechanical Engineering
PHD, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 2009

Alvarado, Jorge L, Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Illinois, 2004

Amiri, Ahmad, Visiting Assistant Professor
Mechanical Engineering
PHD, University of Malaya, 2017
PHD, University of Malaya, 2015

Anand, Nagamangala, Professor
Mechanical Engineering
PHD, Purdue University, 1983

Antao, Dion S, Assistant Professor
Mechanical Engineering
PHD, Drexel University, 2013

Arroyave, Raymundo, Professor (courtesy appointment)
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 2004

Asadi, Amir, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Manitoba, 2013

Balawi, Shadi Omar, Instructional Associate Professor
Mechanical Engineering
PHD, University of Cincinnati, 2007

Banerjee, Debjyoti, Professor
Mechanical Engineering
PHD, University of California, Los Angeles, 1999

Benjamin, Chandler C, Research Assistant Professor
Mechanical Engineering
PHD, University of Wisconsin - Madison, 2017

Borazjani, Iman, Associate Professor
Mechanical Engineering
PHD, University of Minnesota, 2008

Caton, Jerald A, Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1980

Charoenphol, Phapanin, Research Assistant Professor
Mechanical Engineering
DEN, University of Michigan, 2012

Claridge, David E, Professor
Mechanical Engineering
PHD, Stanford University, 1976

Cope, Dale A, Associate Professor of the Practice
Mechanical Engineering
PHD, Wichita State University, 2002

Corleto, Carlos Roberto, Professor Of The Practice
Mechanical Engineering
PHD, Texas A&M, 1990

Darbha, Swaroop V, Professor
Mechanical Engineering
PHD, University of California, Berkeley, 1994

Delgado, Adolfo, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2008

Demkowicz, Michal J, Associate Professor (courtesy appointment)
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 2005

Felts, Jonathan R, Assistant Professor
Mechanical Engineering
DEN, University of Illinois Urbana Champaign, 2013

Freed, Alan D, Professor
Mechanical Engineering
DEN, University of Wisconsin - Madison, 1985

Gao, Huajian, Visiting Professor
Mechanical Engineering
PHD, Harvard University, 1988

Girimaji, Sharath S, Professor (courtesy appointment)
Mechanical Engineering
PHD, Cornell University, 1990

Gonezen, Sevan, Assistant Professor
Mechanical Engineering
PHD, Rensselaer Polytechnic Institute, 2011

Gopalswamy, Swaminathan, Professor of the Practice
Mechanical Engineering
PHD, University of California, 1991

Grunlan, Jaime C, Professor
Mechanical Engineering
PHD, University of Minnesota, 2001

Haglund, John S, Associate Professor of Instruction
Mechanical Engineering
PHD, Texas A&M University, 2003

Hajimirza, Shima, Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2013

Han, Je C, University Distinguished Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1977

Hasnain, Zohaib, Research Assistant Professor
Mechanical Engineering
PHD, University of Maryland, 2014

Hassan, Yassin A, Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Illinois, 1980

Hipwell, M Cynthia, Professor
Mechanical Engineering
PHD, University of California-Berkeley, 1996

Hogan, Harry A, Professor
Mechanical Engineering
PHD, Texas A&M University, 1984

Hsieh, Sheng-Jen, Professor (courtesy appointment)
Mechanical Engineering
PHD, Texas Tech University, 1995

Hubbard Jr, James, Professor
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 1982

Hung, Nguyen P, Associate Professor (courtesy appointment)
Mechanical Engineering
PHD, University of California, Berkeley, 1987

Hur, Pilwon, Assistant Professor
Mechanical Engineering
DEN, University of Illinois at Urbana-Champaign, 2010

Jacobs, Timothy J, Professor
Mechanical Engineering
PHD, University of Michigan, 2005

Jarrahbashi, Dorrin, Assistant Professor
Mechanical Engineering
PHD, University of California Irvine, 2014

Karaman, Ibrahim, Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Illinois - Urbana-Champaign, 2000

Kim, Haejune, Assistant Professor of Instruction
Mechanical Engineering
PHD, University of Wisconsin - Milwaukee, 2014

Kim, Won-Jong, Associate Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1997

Kim, Yong-Joe, Associate Professor
Mechanical Engineering
PHD, Purdue University, 2003

Kimber, Mark, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, Purdue University, 2008

Kulatilaka, Waruna D, Associate Professor
Mechanical Engineering
DEN, Purdue University, 2006

Lacy, Thomas E., Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 1998

Layton, Astrid C, Assistant Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2014

Lee, ChaBum, Assistant Professor
Mechanical Engineering
PHD, Gwangju Institute of Science and Technology, 2012

Li, Ying, Associate Professor
Mechanical Engineering
PHD, University of Florida, 2007

Liang, Hong, Professor
Mechanical Engineering
PHD, Stevens Institute of Technology, 1992

Ma, Chao, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, University of California, 2015

Malak Jr, Richard J, Associate Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2008

Mathieu, Olivier E, Research Associate Professor
Mechanical Engineering
PHD, University of Orleans, 2007

McAdams II, Daniel A, Professor
Mechanical Engineering
PHD, University of Texas - Austin, 1999

McVay, Matilda W, Instructional Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 1996

Mohiuddin, Mohammad W, Research Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2008

Moreno, Michael R, Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2009

Muliana, Hanifah, Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2004

Needleman, Alan, Professor (courtesy appointment)
Mechanical Engineering
PHD, Harvard University, 1971

Pagilla, Prabhakar R, Professor
Mechanical Engineering
PHD, University of California, Berkeley, 1996

Palazzolo, Alan B, Professor
Mechanical Engineering
PHD, University of Virginia, 1981

Pate, Michael B, Professor
Mechanical Engineering
PHD, Purdue University, 1982

Petersen, Eric L, Professor
Mechanical Engineering
PHD, Stanford University, 1998

Pharr, George, Assistant Professor
Mechanical Engineering
PHD, Harvard University, 2014

Polycarpou, Andreas A, Professor
Mechanical Engineering
PHD, Suny University at Buffalo, 1994

Radovic, Miladin, Associate Professor (courtesy appointment)
Mechanical Engineering
PHD, Drexel University, 2001

Rajagopal, Kumbakonam, University Distinguished Professor
Mechanical Engineering
PHD, University of Minnesota, 1978

Rasmussen, Bryan P, Professor
Mechanical Engineering
PHD, University of Illinois, 2005

Rathinam, Sivakumar, Associate Professor
Mechanical Engineering
PHD, University of California, Berkeley, 2007

Reddy, Junuthula N, University Distinguished Professor
Mechanical Engineering
PHD, University of Alabama at Huntsville, 1974

Robbins, Andrew B, Visiting Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2018

Ryu, Seok Chang, Assistant Professor
Mechanical Engineering
PHD, Stanford University, 2013

Sanandres, Luis A, Professor
Mechanical Engineering
PHD, Texas A&M University, 1985

Saripalli, Srikanth, Associate Professor
Mechanical Engineering
PHD, University of Southern California, 2007

Schobeiri, Taher M, Senior Professor
Mechanical Engineering
PHD, Technische Universitat Darmstadt, Germany, 1979

Scully, Marlan O, Professor (courtesy appointment)
Mechanical Engineering
PHD, Yale University, 1966

Song, Xingyong, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Minnesota, Twin Cities, 2011

Srinivasa, Arun R, Professor
Mechanical Engineering
PHD, University of California, Berkeley, 1991

Staack, David A, Associate Professor
Mechanical Engineering
PHD, Drexel University, 2008

Su, Hung-Jue, TEES Research Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Michigan - Ann Arbor, 1988

Suh, Chii-Der, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 1997

Tai, Li-Jung, Assistant Professor
Mechanical Engineering
PHD, University of Michigan Ann Arbor, 2011

Tsenn, Joanna N, Instructional Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2016

Vinayak, Fnu, Assistant Professor
Mechanical Engineering
PHD, Purdue University, 2016

Wang, Jyhwen, Professor (courtesy appointment)
Mechanical Engineering
PHD, Northwestern University, 1991

Wang, Ya, Associate Professor
Mechanical Engineering
PHD, Virginia Tech, 2012

Wen, Sy-Bor, Associate Professor
Mechanical Engineering
PHD, University of California, Berkeley, 2006

Wilkerson, Justin W, Assistant Professor
Mechanical Engineering
PHD, Johns Hopkins University, 2014

Wright, Lesley M, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, College Station, 2006

Yu, Choongho, Associate Professor
Mechanical Engineering
PHD, University of Texas - Austin, 2004

Zambrano-Roman, Byron Alfonso, Research Assistant Professor
Mechanical Engineering
PHD, Michigan State University, 2017

Zhang, Xudong, Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Michigan Ann Arbor, 1997

Masters

- Master of Engineering in Mechanical Engineering (p. 862)
- Master of Science in Mechanical Engineering (p. 864)

Doctoral

- Doctor of Philosophy in Mechanical Engineering (p. 868)

Master of Engineering in Mechanical Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 862)
- Degree Plan (p. 863)
- Credit Requirement (p. 863)
- Transfer of Credit (p. 863)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 863)
- Final Examination (p. 864)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be

required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to

correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University,

or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the MEng Mechanical Engineering non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 864)
- Time Limit (p. 864)
- Foreign Languages (p. 864)
- Internship or Practicum (p. 864)
- Application for Degree (p. 864)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Mechanical Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- | | | |
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| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
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|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 865) • Degree Plan (p. 866) • Credit Requirements (p. 866) • Transfer of Credit (p. 866) • Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 866) • Thesis Option (p. 867) <ul style="list-style-type: none"> • Thesis Proposal (p. 867) • Final Examination/Thesis Defense (p. 867) • Non-Thesis Option (p. 868) | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | <h2>Student's Advisory Committee</h2> <p>The Master of Science in Mechanical Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.</p> <p>For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of no fewer than three members of the graduate faculty, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the</p> | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. | | | |

committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Thesis Defense/Final Examination

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Mechanical Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 868)
- Continuous Registration (p. 868)
- Time Limit (p. 868)
- Foreign Languages (p. 868)
- Application for Degree (p. 868)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Mechanical Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired

the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 870)
- Degree Plan (p. 870)
- Transfer of Credit (p. 870)
- Research Proposal (p. 871)
- Examinations (p. 871)
 - Preliminary Examination (p. 871)
 - Preliminary Examination Format (p. 871)
 - Preliminary Examination Scheduling (p. 871)
 - Report of Preliminary Examination (p. 872)
 - Retake of Failed Preliminary Examination (p. 872)
 - Final Examination (p. 872)
 - Report of Final Examination (p. 873)
- Dissertation (p. 873)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 873)
- Time Limit (p. 873)

- Continuous Registration (p. 873)
- Admission to Candidacy (p. 874)
- Languages (p. 874)
- 99-Hour Cap on Doctoral Degree (p. 874)
- Application for Degree (p. 874)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Nuclear Engineering

<http://engineering.tamu.edu/nuclear>

Head: Y. A. Hassan

Graduate Advisor: P. Tsvetkov

The nuclear engineer applies radiation and energy from nuclear sources to fields such as electricity generation, space craft propulsion, sterilization, food processing, industrial measurements and medical diagnostic and therapeutic treatments. Nuclear engineering is based on the principles of nuclear physics that govern radioactivity, fission and fusion; the production of heat and radiation in those processes; and the interaction of radiation with matter. The function of the nuclear engineer is to apply these principles to a wide range of challenging technological problems.

The Department of Nuclear Engineering offers the Master of Engineering, Master of Science and Doctor of Philosophy degrees. The department also offers courses and faculty supervision for students pursuing the Doctor of Engineering degree. Admission to nuclear engineering requires a bachelor's degree in engineering, chemistry, mathematics, physics or other related areas. Some nuclear physics background is highly desirable. Mathematics through differential equations is required but prefer through Linear Algebra.

The department does not have a foreign language requirement for the Ph.D. degree. Successful completion of a departmental qualifying exam is required.

Research opportunities are varied, with emphasis on nuclear fuels, solid/ion interactions, particle transport, large-scale scientific computing, materials and extreme environments, reactor safety, design of advanced nuclear reactors, thermal hydraulics, computational fluid mechanics, reactor kinetics and control, plutonium disposition, radiation interactions with living tissue, dosimetry and medical radionuclides.

The department offers a wide variety of facilities for instructional and research purposes. These include a well-equipped radiation measurements laboratory, a sub-critical reactor laboratory, access to a supercomputer facility and a University-wide UNIX network, a departmental computer facility including interconnected UNIX

and Windows workstations with an extensive software library, a radiochemistry laboratory, thermal hydraulics laboratories, materials research laboratories, an AGN-201M low-power nuclear reactor, five low-energy ion accelerators and a large TRIGA research reactor located at the Texas A&M University Nuclear Science Center. An 88-inch cyclotron is also available for research in nuclear physics and engineering at the Cyclotron Institute.

Faculty

Adams, Marvin L, Professor
Nuclear Engineering
PHD, University of Michigan - Ann Arbor, 1986

Ahmed, Karim E, Assistant Professor
Nuclear Engineering
PHD, Purdue University, 2015

Chirayath, Sunil S, Associate Professor
Nuclear Engineering
PHD, University of Madras, 2005
PHD, University of MAdras, India, 2005

Dewji, Shaheen Azim, Assistant Professor
Nuclear Engineering
PHD, Georgia Institute of Technology, 2014

Ford, John R, Associate Professor
Nuclear Engineering
PHD, University of Tennessee, 1992

Hassan, Yassin A, Professor
Nuclear Engineering
PHD, University of Illinois, 1980

Kimber, Mark L, Assistant Professor
Nuclear Engineering
PHD, Purdue University, 2008

Kirkland, Karen V, Professor
Nuclear Engineering
PHD, The University of Tokyo, 1999

Kurwitz, Richard C, Senior Lecturer
Nuclear Engineering
PHD, Texas A&M University, 2009

Marianno, Craig M, Assistant Professor
Nuclear Engineering
PHD, Oregon State University, 2000

Marlow, William H, Senior Professor
Nuclear Engineering
PHD, University of Texas, 1974
PHD, University of Texas, 1973

McDeavitt, Sean M, Professor
Nuclear Engineering
PHD, Purdue University, 1992

Morel, Jim E, Professor
Nuclear Engineering
PHD, The University of New Mexico, 1979

Nguyen, Duy T, Research Assistant Professor
Nuclear Engineering
DEN, Ritsumeikan University, 2010

Ostrovskaya, Natela G, Senior Lecturer
Nuclear Engineering
PHD, Texas A&M University, 2005

Peddicord, Kenneth L, Professor
Nuclear Engineering
PHD, University of Illinois, 1972

Poston, John W, Professor
Nuclear Engineering
PHD, Georgia Institute of Technology, 1971

Prasad, Shikha, Assistant Professor
Nuclear Engineering
PHD, University of Michigan, Ann Arbor, 2012

Ragusa, Jean C, Professor
Nuclear Engineering
PHD, Institut National Polytechnique de Grenoble, France, 2002

Shao, Lin, Professor
Nuclear Engineering
PHD, University of Houston, 2001

Tsvetkov, Pavel V, Associate Professor
Nuclear Engineering
PHD, Texas A&M University, 2002

Tsvetkova, Galina V, Lecturer
Nuclear Engineering
PHD, Texas A&M University, 2003

Vaghetto, Rodolfo, Research Assistant Professor
Nuclear Engineering
PHD, Texas A&M University, 2013

Masters

- Master of Engineering in Nuclear Engineering (p. 875)
- Master of Science in Nuclear Engineering (p. 878)

Doctoral

- Doctor of Philosophy in Nuclear Engineering (p. 882)

Certificates

- Nuclear Security Certificate (p. 888)

Master of Engineering in Nuclear Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 876)
- Degree Plan (p. 876)
- Credit Requirement (p. 876)
- Transfer of Credit (p. 876)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 877)
- Final Examination (p. 877)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the

case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 878)
- Time Limit (p. 878)
- Foreign Languages (p. 878)
- Internship or Practicum (p. 878)
- Application for Degree (p. 878)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Nuclear Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

- 1
- Meet with departmental graduate advisor to plan course of study for first semester.
- When:** Before first semester registration.
Approved by: Graduate advisor or chair of the intercollegiate faculty.

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|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |

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| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdpps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 879)
- Degree Plan (p. 879)
- Credit Requirements (p. 879)
- Transfer of Credit (p. 880)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 880)
- Thesis Option (p. 880)
 - Thesis Proposal (p. 881)
 - Final Examination/Thesis Defense (p. 881)

Student's Advisory Committee

The Master of Science in Nuclear Engineering is a thesis option, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval of the degree plan indicates their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Ordinarily, the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other

than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 881)
- Continuous Registration (p. 881)
- Time Limit (p. 882)
- Foreign Languages (p. 882)
- Application for Degree (p. 882)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98,

5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Nuclear Engineering

Students interested in doctoral level studies in health physics can pursue these through the PhD program in nuclear engineering. In addition, a professional education program in health physics, leading to the Master of Science degree in health physics, is available in the department.

This area of specialized study in the Department of Nuclear Engineering is based strongly on the fundamental aspects of radiation effects on matter, internal and external dosimetry and environmental aspects of nuclear power. The curriculum is such that students are educated at a professional level in the field of radiation safety or health physics.

A student is required to spend the initial academic year taking formal coursework in the Department of Nuclear Engineering and in other cooperating departments of the University. The summer is spent in opportunities providing on-the-job training in health physics as well as funded research projects suitable for the MS thesis. At least one additional semester is normally required to complete the coursework and a research project for the Master of Science degree in Health Physics.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 883)
- Degree Plan (p. 884)
- Transfer of Credit (p. 884)
- Research Proposal (p. 884)
- Examinations (p. 884)
 - Preliminary Examination (p. 884)
 - Preliminary Examination Format (p. 885)
 - Preliminary Examination Scheduling (p. 885)
 - Report of Preliminary Examination (p. 885)
 - Retake of Failed Preliminary Examination (p. 885)
 - Final Examination (p. 886)
 - Report of Final Examination (p. 886)
- Dissertation (p. 886)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

- Residence (p. 887)
- Time Limit (p. 887)

- Continuous Registration (p. 887)
- Admission to Candidacy (p. 887)
- Languages (p. 887)
- 99-Hour Cap on Doctoral Degree (p. 887)
- Application for Degree (p. 888)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Nuclear Security - Certificate

The Department of Nuclear Engineering offers a Nuclear Security Certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|---------------------------------|-------------------------------------------------------|-----------------------|
| Select four from the following: | | 12 |
| INTA 669/ | Nuclear Terrorism Threat | |
| NUEN 669 | Assessment and Analysis | |
| NUEN 451 | Nuclear Security System Design | |
| NUEN 605 | Radiation Detection and Nuclear Materials Measurement | |
| NUEN 650 | Nuclear Nonproliferation and Arms Control | |
| NUEN 651 | Nuclear Fuel Cycles and Nuclear Material Safeguards | |
| Total Semester Credit Hours | | 12 |

Department of Ocean Engineering

<http://engineering.tamu.edu/ocean>

Department Head: Sharath Girimaji

Graduate Advisor: David Allen

Ocean engineering is the application of basic engineering principles to the analysis, design, construction, and management of systems that operate in the ocean environment. The graduate ocean engineering program is broad-based and is designed to fit the needs of graduates from most engineering disciplines and naval architecture. Typical ocean engineering application areas include: beach protection and nourishment, coastal structures, coastal erosion, current and wave structure interaction, development of ocean energy resources, dynamics of offshore platforms and vessels, hydrodynamics, ocean turbulence modeling, instrumentation for coastal and offshore measurements, marine dredging and dredged material placement, marine risers, moored and towed systems, numerical and physical modeling of ocean processes

and systems, ocean mining, offshore petroleum recovery, offshore structures, pipeline flow assurance, ports and harbors, remotely operated and autonomous underwater vehicles, renewable ocean energy systems, search and salvage, suspended and dissolved constituent transport, subsea pipelines and cables, submersible vehicles and sustainable and resilient ocean systems.

The graduate degree programs include coursework leading to the Master of Science (MS, thesis or non-thesis), Master of Engineering (ME), and Doctor of Philosophy (PhD) degrees in Ocean Engineering and Doctor of Engineering (DEng) in engineering. Students entering the graduate degree program have widely varied engineering backgrounds. Each graduate student is expected to become well versed in the appropriate support disciplines, particularly mathematics, ocean wave mechanics, and hydrodynamics. The student is expected to achieve reasonable competence in the principal areas of offshore structures, coastal and port engineering, coastal and estuarine processes, dredging and/or mining processes, underwater systems, or marine hydrodynamics. The graduate program is designed to provide students with knowledge of engineering in the ocean environment and to establish a base for ocean engineering research. Graduate courses are given in ocean engineering wave theory, marine hydrodynamics, oceanography, mathematics, coastal engineering, estuary hydrodynamics, sediment transport, dynamics of offshore structures, dynamics of ocean vehicles, marine dredging, port and harbor design, laboratory modeling, nonlinear hydrodynamics, computational fluid dynamics, ocean probability and statistics applications, and advanced offshore and coastal numerical methods.

The Department of Ocean Engineering is a two-campus department with campuses located in College Station and Galveston. The laboratory facilities in College Station are among the most comprehensive in the nation for testing offshore, coastal, and underwater systems. The College Station facilities are located in Offshore Technology Research Center (OTRC) and the Reta and Bill Haynes '46 Engineering Building (HEB). The facilities in Galveston include two wave channels and provide access to the Gulf of Mexico through use of small boats, field equipment and instrumentation, and research vessels are available for offshore and coastal engineering research and education.

There is no foreign language requirement for PhD in ocean engineering or DEng in engineering. Students pursuing PhD in ocean engineering or DEng in engineering are required to pass the Ocean Engineering qualifying exam.

Faculty

Allen, David, Senior Lecturer and Director and Department Advisor of graduate and undergraduate programs
Ocean Engineering
PHD, Texas A&M University, 1980

Amini, Noushin, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2011

Ardani, Samira, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2016

Chang, Kuang-An, Professor
Ocean Engineering
PHD, Cornell University, 1999

Chen, Hamn C, Professor
Ocean Engineering
PHD, University of Iowa, 1982

Chung, Jin-Sug, Associate Professor Of The Practice
Ocean Engineering
PHD, University of Michigan, 1991

Duran Vinent, Orencio, Assistant Professor
Ocean Engineering
PHD, University of Stuttgart, 2007

Falzarano, Jeffrey M, Professor
Ocean Engineering
PHD, University of Michigan, Ann Arbor, 1990

Figlus, Jens, Associate Professor
Ocean Engineering
PHD, University of Delaware, 2010

Girimaji, Sharath S, Department Head
Ocean Engineering
PHD, Cornell University, 1990

Gordon, Robert B, Associate Professor of Practice
Ocean Engineering
PHD, University of Rhode Island, 1982

Horrillo, Juan J, Associate Professor
Ocean Engineering
PHD, University of Alaska at Fairbanks, 2006

Jameson, Antony, Professor
Ocean Engineering
PHD, Cambridge University, 1963
PHD, University of Cambridge, 1963

Kang, Heonyong, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2014

Kim, Moohyun, Professor
Ocean Engineering
PHD, Massachusetts Institute of Technology, 1988

Koola, Paul M, Professor of the Practice
Ocean Engineering
PHD, Indian Institute of Technology, Madras, 1991

Na, Byoungjoon, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2010

Panchang, Vijaykumar G, Regents Professor
Ocean Engineering
PHD, University of Maine, 1985

Paredes Tobar, Lenin Marcelo, Assistant Professor
Ocean Engineering
PHD, University of Sao Paulo, Sao Paulo, Brazil, 2012

Perlin, Marc, Professor and Associate Department Head
Ocean Engineering
PHD, University of Florida Gainesville, 1989

Randall, Robert E, Professor Emeritus
Ocean Engineering
PHD, University of Rhode Island, 1972

Rodriguez, Ignacio J, University Distinguished Professor
Ocean Engineering
PHD, Colorado State University, 1967

Sekaran, Aarthi, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2012

Skelton, Robert E, TEES Eminent Professor
Ocean Engineering
PHD, University of California, 1976

Song, Youn K, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2013

Subramanian, Rahul, Lecturer
Ocean Engineering
PHD, University of Michigan, 2012

Sweetman, John A, Professor
Ocean Engineering
PHD, Stanford University, 2001

Wood, Amanda L, Instructional Associate Professor
Ocean Engineering
PHD, University of Houston, 2010

Masters

- Master of Engineering in Ocean Engineering (p. 889)
- Master of Science in Ocean Engineering (p. 892)

Doctoral

- Doctor of Philosophy in Ocean Engineering (p. 896)

Master of Engineering in Ocean Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 890)
- Degree Plan (p. 890)
- Credit Requirement (p. 890)
- Transfer of Credit (p. 890)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 890)
- Final Examination (p. 891)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the

deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu/>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan**. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 891)
- Time Limit (p. 892)
- Foreign Languages (p. 892)
- Internship or Practicum (p. 892)
- Application for Degree (p. 892)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Ocean Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | | |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | |
| 3 | | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 893)
- Degree Plan (p. 893)
- Credit Requirements (p. 893)
- Transfer of Credit (p. 893)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 894)
- Thesis Option (p. 894)
 - Thesis Proposal (p. 895)
 - Final Examination/Thesis Defense (p. 895)
- Non-Thesis Option (p. 895)

Student's Advisory Committee

The Master of Science in Ocean Engineering has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the

role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a

student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Ocean Engineering.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 895)
- Continuous Registration (p. 896)
- Time Limit (p. 896)
- Foreign Languages (p. 896)
- Application for Degree (p. 896)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Ocean Engineering

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 897)
- Degree Plan (p. 897)
- Transfer of Credit (p. 898)
- Research Proposal (p. 898)
- Examinations (p. 898)
 - Preliminary Examination (p. 898)
 - Preliminary Examination Format (p. 898)
 - Preliminary Examination Scheduling (p. 899)

- Report of Preliminary Examination (p. 899)
- Retake of Failed Preliminary Examination (p. 899)
- Final Examination (p. 900)
- Report of Final Examination (p. 900)
- Dissertation (p. 900)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.

- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 900)
- Time Limit (p. 901)
- Continuous Registration (p. 901)
- Admission to Candidacy (p. 901)
- Languages (p. 901)
- 99-Hour Cap on Doctoral Degree (p. 901)
- Application for Degree (p. 902)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Harold Vance Department of Petroleum Engineering

<http://engineering.tamu.edu/petroleum/>

Head: Jeff Spath

Graduate Advisor: Jenn-Tai Liang

The Department of Petroleum Engineering offers graduate degree programs and coursework at both the master's and doctoral levels. The graduate program in Petroleum Engineering at Texas A&M University is recognized for excellence in teaching and research both nationally and internationally, and this program is consistently rated as one of the best graduate programs in Petroleum Engineering by U.S. News and World Report. Details concerning the faculty, current research projects and technology specialties can be found at our website <http://engineering.tamu.edu/petroleum/>

Degree Programs

The Department offers traditional MS and PhD degrees that emphasize technical skills and research capabilities and MEng and DEng degrees that emphasize practical engineering skills along with business and management practices. In all degree programs, students who enter with undergraduate degrees (BS or equivalent) in other fields of engineering or closely related study (including physics and geosciences) will be required to take at least three courses from a core curriculum that represents each of the major areas of study in the industry; these courses will count as part of the degree requirement.

Students who enter the program with degrees other than engineering, physics, or geosciences will be required to complete preparatory study at the undergraduate level before beginning graduate coursework. These prerequisite courses will not count toward degree requirements.

Faculty

Abedi Mashhadimighani, Sara, Assistant Professor
Petroleum Engineering
PHD, University of Southern California, 2012

Akkutlu, Ibrahim Y, Professor
Petroleum Engineering
PHD, University of Southern California, 2002

Banerjee, Debjyoti, Professor
Petroleum Engineering
PHD, University of California, Los Angeles, 1999

Barrufet, Maria A, Professor
Petroleum Engineering
PHD, Texas A&M University, 1987

Bastian, Peter A, Professor of the Practice
Petroleum Engineering
MS, Texas A&M University, 1983

Blasingame, Thomas A, Professor
Petroleum Engineering
PHD, Texas A&M University, 1989

Dattagupta, Akhil, Distinguished Professor
Petroleum Engineering
PHD, University of Texas, 1992

Gildin, Eduardo, Associate Professor
Petroleum Engineering
PHD, University of Texas, 2006

Hascakir, Berna, Associate Professor
Petroleum Engineering
PHD, Middle East Technical University, 2008

Hill, Alfred D, Professor
Petroleum Engineering
PHD, University of Texas, 1978

Holditch, Stephen A, Professor
Petroleum Engineering
PHD, Texas A&M University, 1976

Jochen, John E, Senior Lecturer
Petroleum Engineering
MS, Texas A&M University, 1993

Jochen, Valerie Ann, Professor of the Practice
Petroleum Engineering
PHD, Texas A&M University, 1994

Killough, John E, Professor
Petroleum Engineering
PHD, Rice University, 1986

Kim, Jihoon, Assistant Professor
Petroleum Engineering
PHD, Stanford University, 2010

King, Michael J, Professor
Petroleum Engineering
PHD, Syracuse University, 1980

Laprea Bigott, Marcelo, Professor of the Practice
Petroleum Engineering
PHD, Texas A&M University, 1979

Lee, William J, Professor
Petroleum Engineering
PHD, Georgia Institute of Technology, 1963

Liang, Jenn T, Professor
Petroleum Engineering
PHD, The University of Texas at Austin, 1988

Maggard, Bryan, Senior Lecturer
Petroleum Engineering
PHD, Texas A&M University, 2000

McCain Jr, William D, Visiting Professor
Petroleum Engineering
PHD, Georgia Institute of Technology, 1964

McVay, Duane A, Professor
Petroleum Engineering
PHD, Texas A&M University, 1994

Medina Cetina, Zenon, Associate Professor
Petroleum Engineering
PHD, John Hopkins University, 2007
PHD, Johns Hopkins University, 2007

Moridis, George J, Professor
Petroleum Engineering
PHD, Texas A&M University, 1987

Morita, Nobuo, Professor
Petroleum Engineering
PHD, The University of Texas at Austin, 1974

Nascentes Alves, Ibero, Professor of the Practice
Petroleum Engineering
PHD, University of Tulsa, 1991

Nasr-El-Din, Hisham A, Professor
Petroleum Engineering
PHD, University of Saskatchewan, 1984

Nasrabadi, Hadi, Assistant Professor
Petroleum Engineering
PHD, Imperial College London, United Kingdom, 2006

Noynaert, Samuel F, Assistant Professor
Petroleum Engineering
PHD, Texas A&M University, 2013

Rodrigues De Paula Lima, Heitor, Professor of the Practice
Petroleum Engineering
PHD, Texas A&M University, 1998

Schechter, David S, Professor
Petroleum Engineering
PHD, Bristol University, United Kingdom, 1989

Schubert, Jerome J, Associate Professor
Petroleum Engineering
PHD, Texas A&M University, 1999

Spath, Jeffrey B, Professor
Petroleum Engineering
PHD, Mining University of Leoben, Austria, 1996

Sun, Yuefeng, Professor
Petroleum Engineering
PHD, Columbia University, 1994

Voneiff, George W, Professor of the Practice
Petroleum Engineering
MS, Texas A&M University, 1992

Weijermars, Rudy, Professor
Petroleum Engineering
PHD, University of Uppsala, 1987

Wu, Kan, Assistant Professor
Petroleum Engineering
PHD, The University of Texas at Austin, 2014

Zhu, Ding, Professor
Petroleum Engineering
PHD, University of Texas, 1992

Masters

- Master of Engineering in Petroleum Engineering (p. 903)
- Master of Science in Petroleum Engineering (p. 906)

Doctoral

- Doctor of Philosophy in Petroleum Engineering (p. 910)

Master of Engineering in Petroleum Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 903)
- Degree Plan (p. 904)
- Credit Requirement (p. 904)
- Transfer of Credit (p. 904)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 904)
- Final Examination (p. 905)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus and Distance Education Degree Programs

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better.

All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 905)
- Time Limit (p. 905)
- Foreign Languages (p. 906)
- Internship or Practicum (p. 906)
- Application for Degree (p. 906)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which

it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

On-Campus and Distance Education Degree Programs

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Petroleum Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | | |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | |
| 3 | | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 907)
- Degree Plan (p. 907)
- Credit Requirements (p. 907)
- Transfer of Credit (p. 907)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 908)
- Thesis Option (p. 908)
 - Thesis Proposal (p. 908)
 - Final Examination/Thesis Defense (p. 909)

Student's Advisory Committee

The Master of Science in Petroleum Engineering requires a thesis.

For the Thesis option, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours is required for the Master of Science degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D,

F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Two consecutive semesters of zero credit PETE 681 (Seminar) is required for master's students. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day

week of coursework. Each week of coursework must include at least 15 contact hours.

7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.
9. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
10. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate

and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee

member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 909)
- Continuous Registration (p. 909)
- Time Limit (p. 909)
- Foreign Languages (p. 910)
- Application for Degree (p. 910)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time

limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Petroleum Engineering

Typically a Master of Science (MS) degree is required prior to pursuing a PhD degree, which includes a minimum of 64 semester hours beyond the Master of Science (MS) degree, qualifying exam, preliminary exam, proposal, and dissertation. The Qualifying Exam (QE) is required for all PhD students within the first year of study. The exam is given twice a year, January and May, and must be completed successfully.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 911)
- Degree Plan (p. 911)
- Transfer of Credit (p. 912)
- Research Proposal (p. 912)
- Examinations (p. 912)
 - Preliminary Examination (p. 912)
 - Preliminary Examination Format (p. 912)
 - Preliminary Examination Scheduling (p. 913)
 - Report of Preliminary Examination (p. 913)
 - Retake of Failed Preliminary Examination (p. 913)
 - Final Examination (p. 913)
 - Report of Final Examination (p. 914)
- Dissertation (p. 914)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 914)
- Time Limit (p. 915)
- Continuous Registration (p. 915)
- Admission to Candidacy (p. 915)
- Languages (p. 915)
- 99-Hour Cap on Doctoral Degree (p. 915)
- Application for Degree (p. 916)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

College of Geosciences

<http://geosciences.tamu.edu>

Administrative Officers

Interim Dean - Deborah J. Thomas, Ph.D.

Executive Associate Dean and Associate Dean for Research - Jack G. Baldauf, Ph.D.

Associate Dean for Diversity and Climate - Eric M. Riggs, Ph.D.

Associate Dean for Academic Affairs - Christian Brannstrom, Ph.D.

Assistant Dean for Finance and Administration - Barbara A. Bayer

About the College of Geosciences

Geoscientists are leaders in providing solutions to pressing societal problems, including securing a reliable and affordable energy future, optimizing the use of our natural resources, predicting natural hazards and identifying mitigating actions that will allow communities to prosper in times of adversity, expanding our knowledge of Earth and planetary systems for the benefit of future generations, and educating a geoscience workforce who will become future leaders.

The geosciences are an allied group of interdisciplinary sciences focused on understanding the earth system. We combine the insights from all fundamental science, mathematics, engineering and technology fields to understand the history, structure, resources and evolution of our home planet. The geosciences are integral to meeting society's demands for natural resources, environmental quality, and safety in the face of natural hazards. We are therefore also closely intertwined with the economic, political and social well-being of human societies. The geosciences lead the way in providing the scientific solutions to the challenges that characterize the 21st century.

The College of Geosciences at Texas A&M University offers graduate and professional programs designed to give graduates the skills and abilities necessary to make a contribution to this mission. We seek qualified applicants from all scientific and engineering backgrounds, willing and able to join us in interdisciplinary research that crosses departmental and disciplinary boundaries. As a college devoted to these cross-disciplinary studies, we provide a unique environment to learn and apply new skills and insights, and conduct cutting edge research. Most graduate degree programs are focused on research at the Masters and Doctoral levels, but we have an increasing number of professional Masters programs designed for graduates looking for careers in industry and agencies rather than careers in fundamental research.

Interdepartmental Programs

These programs housed primarily within the College of Geosciences cross departmental boundaries and in many cases involve coursework from other colleges at Texas A&M.

Departments

Departments

Department of Atmospheric Sciences (p. 919)

Department of Geography (p. 930)

Department of Geology and Geophysics (p. 941)

Department of Oceanography (p. 964)

Interdepartmental Programs

- Master of Geoscience in Geoscience (p. 916)

Interdepartmental Degree Programs

Masters

- Master of Geoscience in Geoscience (p. 916)

Master of Geoscience in Geoscience

The College of Geosciences offers a non-thesis 36-hour program that leads to the degree of **Master of Geoscience (MGsc)**. The degree is multi-departmental, encompassing all aspects of the geosciences. This degree is offered in distance education and on-campus modalities.

The distance education modality is especially appropriate for professionals in geoscience or related fields advanced training. Structured degree programs are defined in two areas:

- Geographic Information Science and Technology, oriented toward geospatial needs of the oil and gas industry, is housed in the Department of Geography;
- Ocean Data Science, oriented toward data science needs in ocean-related industries and agencies, is housed in the Department of Oceanography.

The on-campus modality offers opportunities to study a broad range of environmental, energy and geoscience topics. The program is not intended as a teacher-certification curriculum. Each department offers this modality. Students admitted to this program are housed in a primary department but may receive advising from across the College. All documents submitted to the Office of Graduate and Professional Studies must be signed by the student's department head in their designated home department.

Program Requirements

Program Requirements

Student's Advisory Committee (p. 916)

Degree Plan (p. 917)

Credit Requirements (p. 917)

Transfer of Credit (p. 917)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 918)

Final Examination (p. 918)

Student's Advisory Committee

On-Campus Degree Program

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty** representative of the student's fields of study and research. The chair or one of the co-chairs of the advisory committee must be from the student's "home" department. The "home" department must be one of the two areas of specialization comprising the major. **At least one or more of the members must have an appointment to a department other than the student's "home" department.** The department head will sign the degree plan.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Distance Education Degree Program

The distance education modality requires an advisory committee to be comprised by the designated coordinator of distance education in the Department of Geography or Department of Oceanography and the Department Head of the Department of Geography or the Department of Oceanography.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus Degree Program

The minimum requirements for the degree are 36 hours of coursework and a satisfactory final comprehensive oral examination. A student is required to take at least 18 hours of credit in Geosciences in two areas of specialization. The areas of specialization for this degree are Atmospheric Sciences, Geography, Geology and Geophysics and Oceanography. A specialization consists of at least 6 credit hours. In addition, a student is required to complete a 6 credit hour supporting field in a discipline other than the two specialization fields.

Distance Education Degree Program

The minimum requirements for the degree are 36 hours of coursework. The student is required to fulfill a capstone course in which an on-campus presence is encouraged but not required; no final examination is required.

Transfer of Credit

On-Campus Degree Program

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Distance Education Degree Program

The distance education modality does not allow transfer of credit.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684 and 685 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 4 hours of 684 (Professional Internship) and
 - Up to 8 hours of 685 (Directed Studies).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 690 (Theory of Research), 691 (Research) or 695 (Frontiers in Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's

own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

On-Campus Degree Program

The candidate must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** See the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu/Buttons/Calendars>. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English language proficiency requirements must be satisfied prior to scheduling the examination.

The candidate is not eligible to petition for an exemption from the final examination. A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. Examinations which are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given **only one** opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

Distance Education Degree Program

The distance education modality does not require a final examination.

Additional Requirements

Additional Requirements

- Residence (p. 919)
- Time Limit (p. 919)
- Foreign Languages (p. 919)
- Internship or Practicum (p. 919)
- Application For Degree (p. 919)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Geoscience, the student must complete 9 credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Geoscience degree.

Internship or Practicum

In the case of on-campus students, the final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Department of Atmospheric Sciences

<http://atmo.tamu.edu>

Head: R. Saravanan

Graduate Chair: I. Szunyogh

Thesis and non-thesis Master of Science as well as Doctor of Philosophy degrees are offered in atmospheric sciences. Students from disciplines other than meteorology are encouraged to enroll in our graduate program. Normal prerequisites are 12 hours of calculus and differential equations and 8 hours of physics. The department offers a basic sequence of courses each year that covers key topics of atmospheric relevance in the areas of fluid dynamics, thermodynamics, cloud physics, radiation, and chemistry. These courses form a base for a large number of the other graduate courses. By the end of their first year, students typically have made arrangements to begin a research project directed by a faculty member. Faculty interests span a wide range extending from field and laboratory work through data analysis, numerical modeling, and theory. Please see the department's website at <http://atmo.tamu.edu> for more information. The Department of Atmospheric Sciences can also serve as the "home" department for the Master of Geoscience Degree. The MGSc is a non-thesis degree that provides a multidisciplinary background in the geosciences that is appropriate for science teachers in public schools or for individuals interested in environmental issues.

Persons with an MS degree in atmospheric sciences typically obtain employment with government agencies, industrial organizations, and consulting firms, or they may enter the meteorological branch of one of the military services. The PhD degree is normally required for a college level teaching or research career.

The Department of Atmospheric Sciences occupies the upper floors in the 15-story David G. Eller Building for Oceanography and Meteorology. The 10-cm Doppler weather radar on top of the building is a campus landmark, and the department jointly operates two mobile radars. In-house laboratory facilities and fixed and mobile observing suites offer many opportunities for physical and chemical studies of the atmosphere. The department is well-equipped for data analysis and modeling, with a high-speed network, numerous personal computers, teaching laboratories, and high-performance computing systems. Additional computing resources are available at the University's Supercomputing Facility.

The Cooperative Institute for Applied Meteorological Studies (CIAMS) is affiliated with the Fort Worth-based headquarters office of the Southern Region of the National Weather Service. The Institute employs research scientists and graduate students in a broad program of applied research and service to Texas and surrounding states in agricultural meteorology, marine meteorology and air-sea interactions over the Gulf of Mexico, lightning and severe weather, and Doppler radar studies from the installments in the Department and at the Houston Forecast Office.

Faculty

Bowman, Kenneth P, Professor
Atmospheric Sciences
PHD, Princeton University, 1984

Brooks, Sarah D, Professor
Atmospheric Sciences
PHD, University of Colorado, 2002

Conlee, Don T, Instructional Professor
Atmospheric Sciences
PHD, Texas A&M University, 1994

Dessler, Andrew E, Professor
Atmospheric Sciences
PHD, Harvard University, 1994

Epifanio, Craig C, Associate Professor
Atmospheric Sciences
PHD, University of Washington, 1999

Korty, Robert L, Associate Professor
Atmospheric Sciences
PHD, Massachusetts Institute of Technology, 2005

Logan, Timothy S, Assistant Professor
Atmospheric Sciences
PHD, University of North Dakota, 2014

Nielsen-Gammon, John W, Professor
Atmospheric Sciences
PHD, Massachusetts Institute of Technology, 1990

North, Jerry R, Research Professor
Atmospheric Sciences
PHD, University of Wisconsin, 1966

Nowotarski, Christopher J, Assistant Professor
Atmospheric Sciences
PHD, Pennsylvania State University, 2013

Panetta, Richard L, Professor
Atmospheric Sciences
PHD, University of Wisconsin, 1978

Rapp, Anita D, Assistant Professor
Atmospheric Sciences
PHD, Colorado State University, 2004

Sanger, Neil, Lecturer
Atmospheric Sciences
PHD, Naval Postgraduate School, CA, 2014

Saravanan, Ramalingam, Professor
Atmospheric Sciences
PHD, Princeton University, 1990

Schade, Gunnar W, Associate Professor
Atmospheric Sciences
PHD, Johannes Gutenberg Universitat, Germany, 1997

Schumacher, Courtney, Professor
Atmospheric Sciences
PHD, University of Washington, 2003

Szunyogh, Istvan, Professor
Atmospheric Sciences
PHD, Hungarian Academy of Sciences, 1994

Xu, Yangyang, Assistant Professor
Atmospheric Sciences
PHD, University of California, San Diego, 2014

Yang, Ping, Professor
Atmospheric Sciences
PHD, University of Utah, 1995

Zhang, Renyi, Distinguished Professor
Atmospheric Sciences
PHD, Massachusetts Institute of Technology, 1994

Masters

- Master of Science in Atmospheric Sciences (p. 920)

Doctoral

- Doctor of Philosophy in Atmospheric Sciences (p. 924)

Master of Science in Atmospheric Science

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- Thesis Proposal (p. 923)
- Final Examination/Thesis Defense (p. 923)
- Non-Thesis Option (p. 924)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 921)
- Degree Plan (p. 922)
- Credit Requirements (p. 922)
- Transfer of Credit (p. 922)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 922)
- Thesis Option (p. 923)

entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the

registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's

own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

- Residence (p. 924)
- Continuous Registration (p. 924)
- Time Limit (p. 924)
- Foreign Languages (p. 924)
- Application for Degree (p. 924)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Atmospheric Sciences

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 926)
- Degree Plan (p. 926)
- Transfer of Credit (p. 926)
- Research Proposal (p. 927)
- Examinations (p. 927)
 - Preliminary Examination (p. 927)
 - Preliminary Examination Format (p. 927)
 - Preliminary Examination Scheduling (p. 927)

- Report of Preliminary Examination (p. 928)
- Retake of Failed Preliminary Examination (p. 928)
- Final Examination (p. 928)
- Report of Final Examination (p. 928)
- Dissertation (p. 929)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 929)
- Time Limit (p. 929)
- Continuous Registration (p. 929)
- Admission to Candidacy (p. 929)
- Languages (p. 930)
- 99-Hour Cap on Doctoral Degree (p. 930)
- Application for Degree (p. 930)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Geography

<http://geography.tamu.edu>

Head: D. Cairns

Graduate Director: I. Guneralp

Graduate work in geography is offered at the master's and doctoral levels. The department has a wide scope. Faculty interests include physical geography (geomorphology, biogeography, climatology, hydrology), human geography (cultural, economic, historical, political, social, urban), geographic information science, human-environment relations and geography education. The Department of Geography can also serve as the "home" department for the Master of Geoscience degree. The MGSc is a non-thesis degree that provides a multidisciplinary background in the geosciences, appropriate for educators or individuals interested in environmental issues.

Graduate students are required to be involved with research work and teaching. Primary data collection is encouraged. Many graduate courses are taught as seminars requiring research papers. A non-thesis option is available for master's-level students, especially those with professional/vocational goals.

Faculty

Allen, George H, Assistant Professor
Geography
PHD, University of North Carolina at Chapel Hill, 2017

Bishop, Michael P, Professor
Geography
PHD, Indiana State University, 1987

Bombardi, Rodrigo J, Assistant Professor
Geography
PHD, University of California Santa Barbara, 2013
PHD, University of California, Santa Barbara, 2013

Brannstrom, Christian, Professor
Geography
PHD, University of Wisconsin - Madison, 1998

Cairns, David M, Professor
Geography
PHD, University of Iowa, 1995

Casellas Connors, John Patrick, Assistant Professor
Geography
PHD, Arizona State University, 2015

Filippi, Anthony M, Associate Professor
Geography
PHD, University of South Carolina, 2003

Frauenfeld, Oliver W, Associate Professor
Geography
PHD, University of Virginia, 2003

Goldberg, Daniel W, Associate Professor
Geography
PHD, University of Southern California, 2010

Gunalp, Burak, Assistant Professor
Geography
PHD, University of Illinois at Urbana-Champaign, 2006

Gunalp, Inci, Associate Professor
Geography
PHD, University of Illinois at Urbana-Champaign, 2007

Jepson, Wendy E, Professor
Geography
PHD, University of California - Los Angeles, 2003

Klein, Andrew G, Professor
Geography
PHD, Cornell University, 1997

Lafon, Charles W, Professor
Geography
PHD, University of Tennessee, Knoxville, 2000

Loisel, Julie, Assistant Professor
Geography
PHD, Lehigh University, 2012

Lyle, Stacey D, Instructional Assistant Professor
Geography
PHD, University of Georgia, 2003

O'Reilly, Kathleen M, Professor
Geography
PHD, University of Iowa, 2002

Prout, Erik, Instructional Associate Professor
Geography
PHD, Louisiana State University, 2001

Roark, Erin B, Associate Professor
Geography
PHD, University of California, Berkeley, 2005

Smith, Jonathan, Professor
Geography
PHD, Syracuse University, 1991

Tchakerian, Vatche P, Professor
Geography
PHD, UCLA, 1989

Thompson, Courtney M, Assistant Professor
Geography
PHD, University of Idaho, 2017

Zhang, Zhe, Assistant Professor
Geography
PHD, Aalto University, 2016

Zou, Lei, Assistant Professor
Geography
PHD, Louisiana State University, 2017

Masters

- Master of Science in Geography (p. 931)

Doctoral

- Doctor of Philosophy in Geography (p. 935)

Master of Science in Geography

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 932)
- Degree Plan (p. 932)
- Credit Requirements (p. 933)
- Transfer of Credit (p. 933)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 933)
- Thesis Option (p. 934)
 - Thesis Proposal (p. 934)
 - Final Examination/Thesis Defense (p. 934)
- Non-Thesis Option (p. 934)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 935)
- Continuous Registration (p. 935)
- Time Limit (p. 935)
- Foreign Languages (p. 935)
- Application for Degree (p. 935)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Geography

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 937) • Degree Plan (p. 937) • Transfer of Credit (p. 937) • Research Proposal (p. 938) • Examinations (p. 938) <ul style="list-style-type: none"> • Preliminary Examination (p. 938) • Preliminary Examination Format (p. 938) • Preliminary Examination Scheduling (p. 938) • Report of Preliminary Examination (p. 939) • Retake of Failed Preliminary Examination (p. 939) • Final Examination (p. 939) • Report of Final Examination (p. 939) • Dissertation (p. 940) | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 940)
- Time Limit (p. 940)
- Continuous Registration (p. 940)
- Admission to Candidacy (p. 940)
- Languages (p. 941)
- 99-Hour Cap on Doctoral Degree (p. 941)
- Application for Degree (p. 941)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Geology and Geophysics

<http://geoweb.tamu.edu>

Head: M. Pope

Graduate Advisor: M. Everett

Geology

Graduate work in geology is offered at both the master's and doctoral levels. Programs are designed to provide the student with an understanding of the fundamentals of geology and of related disciplines. Research investigations comprise a significant part of each program. The Department of Geology and Geophysics can also serve as the "home" department for the Master of Geoscience degree. The MGSc is a non-thesis degree that provides a multidisciplinary background in the geosciences, appropriate for science teachers in public schools, or for individuals interested in environmental issues, for example.

Opportunities for research at both the MS and PhD levels are available in ground-water investigations, sedimentation, mineralogy, paleontology and paleoecology, stratigraphy, structural geology, tectonophysics, petrology, field geology, engineering and environmental geology and geochemistry.

Current research areas of members of the department include studies in the origin and spatial distribution of reservoir porosity in depositional, diagenetic and fracture systems; field, theoretical and experimental study of the formation of faults and fault networks; fluid flow and deformation within thrust sheets; the hydrostatic and hydrodynamic trapping of oil and gas; carbonate platform-to-basin transitions; sandstone provenance and diagenesis; integrated quantitative basin analysis; archaeological palynology; isotope stratigraphy and global change; paleobiogeography of plants; how fossil assemblages form from and reflect living communities; water/rock interactions in flow-through experimental systems; fate and transport of organic pollutants in the unsaturated and saturated zones; composition of movement of crustal fluids; crystal chemistry, phase relations and thermodynamics of mantle-derived amphiboles and micas; diagenesis of clastic sediments in relation to reservoir rock potential and quality; metal contaminants in alpine systems; groundwater impacts of surface mining; groundwater interference in civil construction and mining; landslide mechanics; fluid-flow properties of faults and dynamics of faulted reservoirs; and groundwater flow in strongly heterogeneous media.

The department has state-of-the-art laboratory facilities for radiogenic and stable isotope geochemistry, environmental geochemistry, evolutionary biology, paleobiology, rock mechanics, sedimentary geology, petrology and electron microprobe analysis. In addition, sample preparation labs, petrographic microscopes and an extensive network of computers and peripherals are available for student research. More detail can be found at <http://geoweb.tamu.edu/> under Research Facilities.

The Texas A&M Microscopy and Imaging Center houses additional transmission and scanning electron microscopes. An inductively coupled Ar-plasma emission spectrometer (ICP) and other analytical equipment are available in the Department of Chemistry and the Center for Trace Characterization.

The department benefits from the close association with the Integrated Ocean Drilling Program (IODP). Located in the Texas A&M Research Park adjacent to campus, this \$42 million-per-year basic research program is operated by the College of Geosciences, Texas A&M. The IODP facilities include a large core-storage station and physical-properties, petrography and sedimentary laboratories. Many scientific staff members of the IODP hold adjunct faculty positions in the Department of Geology and Geophysics. The facilities both in the department and elsewhere in the University provide students with an excellent opportunity to use state-of-the-art equipment in their research.

Although degree level is not a requirement for professional practice in geology, the BS should usually be considered as preparatory, the MS should be considered the professional degree and the PhD should be considered the teaching and research degree. The MS degree is granted thesis option only.

In addition to graduate studies requirements for the PhD, the student's committee chair, with advice from the other committee members, will determine, on an individual basis, the student's needs in either foreign language or other broadening areas of study.

Geophysics

The degrees of Master of Science and Doctor of Philosophy are offered in geophysics. Geophysics includes all areas of scientific inquiry that deal with the physical state of the planets and with the dynamic physical processes that act on and within the planets. The deep interior, crust, atmosphere, oceans and space all lie within the province of the geophysicist. To work effectively in so broad an area requires considerable depth and breadth of understanding of physical principles and considerable proficiency in mathematics. Thorough undergraduate training in an earth or physical science is ordinarily regarded as a necessary prerequisite for advanced study.

An intensive two-year program of study at the master's level is available for students who wish to enter the petroleum industry. This MS curriculum pools the resources of the Departments of Geology and Geophysics and Petroleum Engineering in a manner designed to better prepare students for the petroleum industry than conventional offerings in the separate disciplines. The curriculum is intended for students with an undergraduate degree in geology or extensive exposure to geologic concepts through academic training and/or experience. The course sequencing and the subject sequence in each course is carefully designed to use previously acquired knowledge optimally, and to provide experience in applying fundamental concepts in different contexts and in integrating geological, physical, mathematical, computer and statistical skills in the solution of practical problems.

Current research areas of members of the department include studies in theoretical and model seismology focusing on the internal structure of the earth, earthquake mechanisms and seismic exploration; studies of the anisotropy and anelastic properties of sedimentary rocks and application to exploration; regional and global seismology; studies in experimental rock deformation focusing on the failure strength of rocks, friction in rocks; mechanics of fault development; fluid-flow properties of faults and dynamics of faulted reservoirs; marine studies of the structure of the oceanic crust and continental margins in the Gulf of Mexico,

the Caribbean Sea and the Western Pacific; studies of the magnetic anomalies near mid-ocean-ridge systems and the magnetization of oceanic crust; the analysis of magnetic and gravity anomalies and application to exploration and global geophysics; gravity anomalies near trenches, convection in the mantle and global tectonics; vertical seismic profiling; and attenuation of seismic waves.

Members of the department also are involved in geophysical investigations of the sea floor through the Integrated Ocean Drilling Program, which Texas A&M University manages on behalf of JOI, Inc. These investigations include rock magnetism, heat flow, borehole logging and other aspects of marine geophysics.

The department has an extensive computer network of workstations, computer servers and storage for data processing, imaging and modeling. The Immersive Visualization Center provides state-of-the-art 3D visualization of large data sets and models. The Texas A&M Supercomputing Facility is available to students and faculty for computer-intensive applications. The department has field exploration equipment for gravity, ground-penetrating radar, seismic reflection/refraction and electromagnetic surveys. More detail can be found <http://geoweb.tamu.edu/> under Research Facilities.

Faculty

Balta, Joseph B, Visiting Assistant Professor
Geology & Geophysics
PHD, California Institute of Technology, 2010

Bapst, David W, Lecturer
Geology & Geophysics
PHD, University of Chicago, 2013

Becker, Mauro R, Research Professor
Geology & Geophysics
PHD, University of Texas - Austin, 1996

Belanger, Christina L, Assistant Professor
Geology & Geophysics
PHD, University of Chicago, IL, 2011

Benavides Iglesias, Alfonso, Lecturer
Geology & Geophysics
PHD, Texas A&M University, 2007

Bhatia, Mukul R, Executive Professor
Geology & Geophysics
PHD, The Australian National University, 1982

Chester, Frederick M, Professor
Geology & Geophysics
PHD, Texas A&M University, 1988

Chester, Judith S, Professor
Geology & Geophysics
PHD, Texas A&M University, 1992

Clement, Brad M, Professor
Geology & Geophysics
PHD, Columbia University, 1985

Donovan, Arthur D, Professor of the Practice
Geology & Geophysics
PHD, Colorado School of Mines, 1985

Duan, Benchun, Professor
Geology & Geophysics
PHD, University of California, Riverside, 2006

Everett, Mark E, Professor
Geology & Geophysics
PHD, University of Toronto, 1991

Ewing, Ryan C, Associate Professor
Geology & Geophysics
PHD, The University of Texas - Austin, 2009

Giardino, John R, Professor
Geology & Geophysics
PHD, University of Nebraska, Lincoln, 1979

Grossman, Ethan L, Professor
Geology & Geophysics
PHD, University of Southern California, 1982

Hu, Lin Ying, Professor Of The Practice
Geology & Geophysics
PHD, Mines Paris Tech, 1988

Kabir, Mian M, Lecturer
Geology & Geophysics
PHD, Delft University Of Technology, 1997

Kitajima, Hiroko, Assistant Professor
Geology & Geophysics
PHD, Texas A&M University, 2010

Knappett, Peter S, Assistant Professor
Geology & Geophysics
PHD, University of Tennessee at Knoxville, 2010

Kronenberg, Andreas K, Professor
Geology & Geophysics
PHD, Brown University, 1983

Lamb, William M, Professor
Geology & Geophysics
PHD, University of Wisconsin - Madison, 1987

Laya Pereira, Juan Carlos, Assistant Professor
Geology & Geophysics
PHD, Durham University, United Kingdom, 2012

Marcantonio, Franco, Professor
Geology & Geophysics
PHD, Columbia University, 1994

Miller, Brent V, Associate Professor
Geology & Geophysics
PHD, Dalhousie University, Canada, 1997

Newman, Julie, Professor
Geology & Geophysics
PHD, University of Rochester, 1993

Perez, Nicholas D, Assistant Professor
Geology & Geophysics
PHD, University of Texas at Austin, 2015

Pope, Michael, Professor
Geology & Geophysics
PHD, Virginia Tech, 1995

Raymond, Anne L, Professor
Geology & Geophysics
PHD, University of Chicago, 1983

Reece, Julia S, Assistant Professor
Geology & Geophysics
PHD, University of Texas, 2011

Reece, Robert S, Assistant Professor
Geology & Geophysics
PHD, The University of Texas - Austin, 2012

Riggs, Eric A, Associate Professor
Geology & Geophysics
PHD, University of California-Riverside, 2000

Shebl, Mamdouh A, Research Professor
Geology & Geophysics
PHD, University of Wyoming, 1996

Sparks, David W, Professor
Geology & Geophysics
PHD, Brown University, 1992

Sun, Yuefeng, Professor
Geology & Geophysics
PHD, Columbia University, 1994

Tice, Michael M, Associate Research Scientist
Geology & Geophysics
PHD, Stanford University, 2006

Torrez, Betsy D, Lecturer
Geology & Geophysics
PHD, University of Alabama, 1994

Yancey, Thomas E, Professor
Geology & Geophysics
PHD, University of California, Berkeley, 1971

Yu, Alan Zhihui, Professor Of The Practice
Geology & Geophysics
PHD, University of South Carolina, 1992

Zhan, Hongbin, Professor
Geology & Geophysics
PHD, University of Nevada, Reno, 1996

Masters

- Master of Science in Geology (p. 944)
- Master of Science in Geophysics (p. 954)

Doctoral

- Doctor of Philosophy in Geology (p. 948)
- Doctor of Philosophy in Geophysics (p. 958)

Certificates

- Petroleum Geoscience Certificate (p. 964)

Master of Science in Geology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

The Master of Science in Geology requires GEOL 681.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 944)
- Degree Plan (p. 945)
- Credit Requirements (p. 945)
- Transfer of Credit (p. 945)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 946)
- Thesis Option (p. 946)
 - Thesis Proposal (p. 946)
 - Final Examination/Thesis Defense (p. 946)
- Non-Thesis Option (p. 947)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of

the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 947)
- Continuous Registration (p. 947)
- Time Limit (p. 948)
- Foreign Languages (p. 948)
- Application for Degree (p. 948)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Geology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

The Doctor of Philosophy in Geology requires GEOL 681.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 949)
- Degree Plan (p. 949)
- Transfer of Credit (p. 950)
- Research Proposal (p. 950)
- Examinations (p. 950)
 - Preliminary Examination (p. 950)
 - Preliminary Examination Format (p. 950)
 - Preliminary Examination Scheduling (p. 951)
 - Report of Preliminary Examination (p. 951)
 - Retake of Failed Preliminary Examination (p. 951)
 - Final Examination (p. 951)
 - Report of Final Examination (p. 952)
- Dissertation (p. 952)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 952)
- Time Limit (p. 953)
- Continuous Registration (p. 953)
- Admission to Candidacy (p. 953)
- Languages (p. 953)
- 99-Hour Cap on Doctoral Degree (p. 953)
- Application for Degree (p. 954)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Geophysics

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

The Master of Science in Geophysics requires GEOP 681.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 954)
- Degree Plan (p. 955)
- Credit Requirements (p. 955)
- Transfer of Credit (p. 955)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 956)
- Thesis Option (p. 956)
 - Thesis Proposal (p. 956)
 - Final Examination/Thesis Defense (p. 956)
- Non-Thesis Option (p. 957)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major

or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed**

and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 957)
- Continuous Registration (p. 957)
- Time Limit (p. 958)
- Foreign Languages (p. 958)
- Application for Degree (p. 958)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Geophysics

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

The Doctor of Philosophy in Geophysics requires GEOP 681.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 959)
- Degree Plan (p. 959)
- Transfer of Credit (p. 960)
- Research Proposal (p. 960)
- Examinations (p. 960)
 - Preliminary Examination (p. 960)
 - Preliminary Examination Format (p. 960)
 - Preliminary Examination Scheduling (p. 961)
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 - Retake of Failed Preliminary Examination (p. 961)
 - Final Examination (p. 961)
 - Report of Final Examination (p. 962)
- Dissertation (p. 962)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 962)
- Time Limit (p. 963)
- Continuous Registration (p. 963)
- Admission to Candidacy (p. 963)
- Languages (p. 963)
- 99-Hour Cap on Doctoral Degree (p. 963)
- Application for Degree (p. 964)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Petroleum Geoscience - Certificate

The Graduate Certificate in Petroleum Geoscience is an interdisciplinary program in the Department of Geology and Geophysics designed to enhance both critical thinking and the technical skills that serve as the scientific foundation for practicing petroleum geoscience. The program requires a minimum of 18 semester credit hours from Geology and Geophysics and optionally Petroleum Engineering as part of a regular graduate program. In addition, workshops, lectures and field trips enable students to learn about pressing scientific problems in petroleum exploration and production. Students are required to take a core of courses including reflection seismology and seismic interpretation, sequence stratigraphy and basin analysis, 3-D structure and rock properties. One seminar per year is required. In addition, students must choose at least one course from an approved list of supporting courses in both the Department of Geology and Geophysics and Petroleum Engineering. The Certificate is conferred upon successful completion of a MS or PhD degree program in Geology or Geophysics including the required courses. For detailed information please contact the graduate advisor, Department of Geology and Geophysics, Dr. Mark Everett (everett@geo.tamu.edu).

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------|
| GEOP 622 or GEOP 629 or Seismic Interpretation | Petroleum Seismology II | 4 |
| GEOL 622 | Stratigraphy | 3 |
| GEOL 612 | Structural Geology | 3 |
| Select one of the following: | | 3-4 |
| GEOL 624 | Carbonate Reservoirs | |
| GEOL 665 | Structural Petrology | |
| GEOL 668 | Clastic Sedimentology and Sedimentary Petrology | |
| GEOL 681 or GEOP 68 or Seminar | Seminar | 1 |
| One additional course related to Petroleum Geoscience from the list Supplemental Petroleum Geoscience Courses (p. 1788) | | 3-4 |
| Total Semester Credit Hours | | 18 |

Department of Oceanography

<http://ocean.tamu.edu/>

Head: S. Yvon-Lewis

Graduate Director: C. Wiederwohl

Degrees

Degrees of Master of Science and Doctor of Philosophy are offered in oceanography. The department also offers the Master of Ocean Science and Technology (MOST) non-thesis professional degree. The Department of Oceanography can also serve as the "home" department for the Master of Geoscience degree. The MGsc is a non-thesis degree that provides a multidisciplinary background in the geosciences, appropriate for science teachers in public schools, or for individuals interested in environmental issues, for example. The department also offers a certificate in Ocean Observing, usually taken in addition to an MS or PhD degree.

The Department of Oceanography has Fast Track 5 year Bachelor's/ MOST Programs in conjunction with Environmental Geosciences, Atmospheric Sciences and Geology. These Fast Track Programs offer motivated and exceptional students the opportunity to achieve aspirations in an efficient program at Texas A&M, completing a Bachelor's degree in one of these majors: Environmental Geosciences (B.S.), Meteorology (B.S.), Geology (B.S. or B.A.) and the Master of Ocean Science and Technology degree in 5 years. There are only two courses used for dual credit in this program. There is a total of 150 hours of coursework. The concurrent degree program enables these motivated students to coordinate the required B.S. coursework (114 undergraduate credit hours plus 6 dual credit graduate courses) and MOST coursework (36 credit hours including the 6 dual credit graduate courses) to complete the required credit hours for each degree without diminishing scope or quality of work within 5 years.

Oceanography

Oceanography is the interdisciplinary science that focuses on the ocean, its contents and its boundaries. Whereas typical graduate programs lead to progressively greater amounts of specialization, oceanography as an interdisciplinary field admits graduates of specialized areas such as biology, chemistry, geology, geophysics, mathematics, physics or engineering and initially generalizes and broadens their education with a core of required courses. These core courses include the four specializations of the oceanography program—biological, chemical, geological/geophysical and physical oceanography—as well as a seminar covering the state of the science. After this exposure to the interdisciplinary nature of oceanography, the graduate student refocuses in his or her particular subject area to pursue research at the leading edge of the science.

Required prerequisites are the equivalent of a BS degree and basic courses in the fields mentioned above. All students are expected to have had mathematics through integral calculus, at least one year each of physics and chemistry, and at least one survey course in biology and geology. These are in addition to the usual amount of coursework in their major field of science or engineering.

To qualify for an advanced degree in oceanography, the student must demonstrate an ability to apply basic science to the marine environment. This capability requires a combination of principles and methods and a certain body of knowledge unique to oceanography; a student of oceanography must become conversant in all of the marine sciences.

Facilities and Participation in Research

Facilities include office, laboratory and classroom space in the 15-story David G. Eller Building for Oceanography and Meteorology on the College Station campus; the Geochemical and Environmental Research Group, which occupies 20,000 square feet of laboratory and office space and a warehouse-shop area of 8,000 square feet; space at the Texas A&M University Riverside Campus; office and dock facilities on Pelican Island in Galveston, Texas. The department maintains a

network of high performance workstations, personal computers and data storage facilities for use in the collection and analysis of data and for ocean modeling and marine geophysical studies. High speed internet connections allow faculty and students to connect to outside supercomputer centers such as those at NCAR. Graduate students pursuing M.S. or PhD degrees usually take an active part in research grants and contracts awarded to individual professors or research teams by federal and state agencies, industry and private foundations.

Faculty

Baldauf, Jack G, Professor
Oceanography

PHD, University of California, Berkeley, 1985

Campbell, Lisa, Professor
Oceanography

PHD, State University of New York at Stony Brook, 1985

Chang, Ping, Professor
Oceanography
PHD, Princeton University, 1988

Chapman, Piers, Research Professor
Oceanography
PHD, University of Wales, UK, 1983

Dimarco, Steven F, Professor
Oceanography
PHD, University of Texas at Dallas, 1991

Fitzsimmons, Jessica N, Assistant Professor
Oceanography
PHD, Massachusetts Institute of Technology, 2013

Gardner, Wilford D, Senior Professor
Oceanography
PHD, Massachusetts Inst of Technology, 1978

Giese, Benjamin S, Professor
Oceanography
PHD, University of Washington, 1989

Gold Bouchot, Gerardo, Professor
Oceanography
PHD, CINVESTAV Merida, 1991

Hetland, Robert D, Professor
Oceanography
PHD, Florida State University, 1999

Jochens, Ann E, Professor Of The Practice
Oceanography
PHD, Texas A&M University, 1997
JD, University of Oregon, 1977

Knap, Anthony H, Professor
Oceanography
PHD, University of South Hampton, 1978

Orsi, Alejandro H, Professor
Oceanography
PHD, Texas A&M University, 1993

Petrik, Colleen, Research Assistant Professor
Oceanography
PHD, Massachusetts Institute of Technology, 2011

Potter, Henry, Assistant Professor
Oceanography
PHD, University of Miami, 2014

Richardson, Mary J, Senior Professor
Oceanography
PHD, Massachusetts Institute of Technology, 1980

Shamberger, Kathryn E, Assistant Professor
Oceanography
PHD, University of Washington, 2011

Slowey, Niall C, Professor
Oceanography
PHD, Massachusetts Institute of Technology, 1991

Stoessel, Achim, Associate Professor
Oceanography
DOC, Universitat Hamburg, 1990

Sylvan, Jason B, Assistant Professor
Oceanography
PHD, Rutgers University, 2008

Thomas, Deborah J, Professor
Oceanography
PHD, University of North Carolina at Chapel Hill, 2002

Thornton, Daniel C, Professor
Oceanography
DOC, Queen Mary Westfield College, University of London, 1996

Thyng, Kristen M, Research Assistant Professor
Oceanography
PHD, University of Washington, 2012

Wiederwohl, Christina L, Instructional Associate Professor
Oceanography
PHD, Texas A&M University, 2012

Yvon-Lewis, Shari A, Professor
Oceanography
PHD, University of Miami, 1994

Zhang, Yige, Assistant Professor
Oceanography
PHD, Yale University, 2015

Masters

- Master of Ocean Science and Technology in Ocean Science and Technology (p. 976)
- Master of Science in Oceanography (p. 966)

Doctoral

- Doctor of Philosophy in Oceanography (p. 970)

Certificates

- Ocean Observing Systems Certificate (p. 977)

Master of Science in Oceanography

The Master of Science in Oceanography requires students to take these courses: OCNG 603, OCNG 608, OCNG 620, OCNG 630, OCNG 640, and OCNG 681.

Further information is available from the department or the website at <http://ocean.tamu.edu>.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

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| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

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| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 1 | The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . | |
| 2 | Complete the application for degree form via the student's Howdy portal. | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 966)
- Degree Plan (p. 967)
- Credit Requirements (p. 967)
- Transfer of Credit (p. 967)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 967)
- Thesis Option (p. 968)
 - Thesis Proposal (p. 968)
 - Final Examination/Thesis Defense (p. 968)
- Non-Thesis Option (p. 969)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department

(or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method,

significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must

be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student

should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 969)
- Continuous Registration (p. 969)
- Time Limit (p. 969)
- Foreign Languages (p. 970)
- Application for Degree (p. 970)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Oceanography

The Doctor of Philosophy in Oceanography requires students to take these courses: OCNG 603, OCNG 608, OCNG 620, OCNG 630, OCNG 640, and OCNG 681.

Further information is available from the department or the website at <http://ocean.tamu.edu/>.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
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| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

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| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 971)
- Degree Plan (p. 971)
- Transfer of Credit (p. 972)
- Research Proposal (p. 972)
- Examinations (p. 972)
 - Preliminary Examination (p. 972)
 - Preliminary Examination Format (p. 972)
 - Preliminary Examination Scheduling (p. 973)
 - Report of Preliminary Examination (p. 973)
 - Retake of Failed Preliminary Examination (p. 973)
 - Final Examination (p. 973)
 - Report of Final Examination (p. 974)
- Dissertation (p. 974)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 974)
- Time Limit (p. 975)
- Continuous Registration (p. 975)
- Admission to Candidacy (p. 975)
- Languages (p. 975)
- 99-Hour Cap on Doctoral Degree (p. 975)
- Application for Degree (p. 976)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Ocean Science and Technology in Ocean Science and Technology

The **Master of Ocean Science and Technology (MOST)** is a non-thesis professional degree. It provides students with education and training from scientists who are active researchers and educators working at the cutting edge of ocean sciences throughout the global ocean, from the Gulf of Mexico to the waters around Antarctica.

The curriculum is designed to 1) Provide students with a basic understanding of the major concepts in oceanography that can be applied in their Ocean Sciences careers, 2) Provide students with the skills and tools to evaluate and analyze data, particularly large datasets of the type generated by ocean observing systems, 3) Facilitate critical thinking and problem solving.

A unique feature of this program is that the curriculum has been designed to interface with existing Bachelor of Science degrees taught in the College of Geosciences. This integration will enable the most capable undergraduate students to obtain both Bachelor's and MOST degree in 5 years in an accelerated degree program.

Students will be required to take 3 credit hour graduate courses in Ocean Observing, Physical Oceanography, Communicating Ocean Science, and Data Methods and Graphical Representation in Oceanography. Students will take 2 prescribed elective 3 credit hour courses from a list of 3 graduate courses. Students will have the opportunity to follow their interests by selecting 5 graduate classes from a list of 26 elective 3 credit hour courses. Finally, all students will take part in a directed 3 credit hour capstone learning experience.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 976)
- Degree Plan (p. 976)
- Credit Requirement (p. 976)
- Transfer of Credit (p. 976)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 976)
- Final Examination (p. 977)

Student's Advisory Committee

All MOST non-thesis students' advisory committees will consist of the departmental graduate advisor for the MOST program or the department head for the Oceanography department. The departmental graduate advisor or the department head has the responsibility of approving the proposed degree plan for all non-thesis MOST students.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies according to deadlines published in the OGAPS calendar each semester for graduation that semester. The calendar may be found at <http://ogaps.tamu.edu>.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved the Office of Graduate and Professional Studies.

Credit Requirement

The minimum requirements for the degree are 36 hours of coursework

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework in **which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:

- Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
- Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. Any combination of 684 and 685 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:

- A maximum of 4 hours of 684 (Professional Internship) and
- Up to 8 hours of 685 (Directed Studies).
- A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. A maximum of 2 hours of Seminar (681).

5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).

6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.

7. No credit hours of 690 (Theory of Research), 691 (Research) or 695 (Frontiers in Research) may be used.

8. Continuing education courses may not be used for graduate credit.

9. Extension courses are not acceptable for credit.

10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final oral examination is not required for the Master of Ocean Science and Technology degree.

Additional Requirements

Additional Requirements

- Residence (p. 977)
- Time Limit (p. 977)
- Foreign Languages (p. 977)
- Application For Degree (p. 977)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Geoscience, the student must complete 9 credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Ocean Science and Technology.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Ocean Observing Systems - Certificate

Certificate in Ocean Observing Systems is offered through the Department of Oceanography. Ocean Observing is an important new direction in oceanographic research that requires specially trained individuals in ocean data collection, data management, and production and distribution of needed products and services. The program provides

training for *in situ* ocean observations, remote sensing technologies, data analysis and display, including geographic information systems (GIS), analytical techniques and modeling. The certificate targets non-thesis graduate students who would like to add an Ocean Observing credential to their portfolio as a means of enhancing their professional prospects.

For detailed information, please contact a graduate advisor in the Department of Oceanography (p. 964).

Program Requirements

| Code | Title | Semester Credit Hours |
|---------------------------------------|-----------------------------------------------------------|-----------------------|
| Foundations of Ocean Observing | | |
| OCNG 604 | Ocean Observing Systems | 3 |
| OCNG 657 | Data Methods and Graphical Representation in Oceanography | 3 |
| GEOG 651 | Remote Sensing for Geographical Analysis | 3 |
| ATMO 629 | Climate Change | 3 |
| Required Course | | 3 |
| Fundamentals of Ocean Science | | |
| Select 1-3 of the following: | | 3-9 |
| OCNG 608 | Physical Oceanography | |
| OCNG 620 | Biological Oceanography | |
| OCNG 640 | Chemical Oceanography | |
| Advanced Specialization Topics | | |
| Select 0-2 of the following: | | 0-6 |
| OCNG 610 | Mathematical Modeling of Marine Ecosystems | |
| OCNG 649 | Estuarine Biogeochemistry | |
| OCNG 689 | Special Topics in... (Global Ocean Observing Platforms) | |
| ATMO 459/ATMO 656 | Tropical Meteorology | |
| GEOG 660 | Applications in GIS | |
| GEOG 661 | Digital Image Processing and Analysis | |
| MATH 601 | Methods of Applied Mathematics I | |
| STAT 601 | Statistical Analysis | |
| STAT 626 | Methods in Time Series Analysis | |
| Total Semester Credit Hours | | 24 |

Bush School of Government and Public Service

<http://bush.tamu.edu>

Administrative Officers

Dean – Mark A. Welsh III

Senior Associate Dean – Frank B. Ashley III, Ed.D.

Assistant Dean for Finance and Administration – Joe Dillard

Assistant Dean for Assessment and Graduate Education – Cole Blease Graham, Ph.D.

Assistant Dean for Diversity and Student Affairs – Matthew Upton, Ph.D.

About the Bush School of Government and Public Service

The Bush School of Government and Public Service offers master's degrees in two areas as well as five graduate certificate programs. Study at the Bush School can lead to a Master of Public Service and Administration degree (MPSA) or Master in International Affairs (MPIA) degree. The professional degree programs prepare students for careers in public service spanning the public and not-for-profit sectors, both domestically and internationally. The courses offered in this catalog are designed for individuals with those interests. For those student with five years or more professional experience, the Executive Master of Public Service and Administration offers a rigorous online degree program with two required one-week sessions in residence. For those students seeking to strengthen their skills in international affairs or homeland security with graduate coursework, the Graduate Certificate in Advanced International Affairs or the Graduate Certificate in Homeland Security are offered. The Bush School also offers the Graduate Certificate in Nonprofit Management and the Graduate Certificate in Public Management for individuals who seek to enhance their understanding of nonprofit organizations and management practices appropriate to the nonprofit sector. One other certificate is intended for specialized audiences. The Graduate Certificate in National Security Affairs provides instruction for those with relevant career experience.

Departments

Department of International Affairs (p. 979)

Department of Public Service and Administration (p. 992)

Interdepartmental Programs

- National Security Affairs Certificate (p. 978)

Interdepartmental Degree Programs Certificates

- National Security Affairs Certificate (p. 978)

National Security Affairs - Certificate

The graduate Certificate in National Security Affairs (Bush School of Government and Public Service) is intended to provide a comprehensive overview of the formation and operation of the United States national security policy for individuals with specific background and experience. Individuals may apply who hold a terminal or graduate degree from an accredited university and three years employment (or a bachelor's degree and five years employment) in a firm, laboratory, agency or non-governmental organization in which the individual's responsibilities involve the development or provision of systems, services or products for use in national or international security. Applicants must meet these requirements and those for admission for graduate study at Texas A&M University as non-degree seeking students (G-6). Proficiency in reading, writing and comprehending spoken English at a level necessary for graduate instruction is required.

Graduate-level courses for the certificate include four required courses selected from a structured menu. Among those courses included are those dealing with deterrence, American foreign policy, terrorism, and national security policy. Typically, this certificate requires residency in the first term of the summer semester followed by courses taken via distance education to complete the program. An individual who successfully completes the program will be awarded the certificate by the Bush School. Grades for courses taken as part of this program will appear on the official university transcript, together with notation that the certificate has been achieved. Inquiries may be addressed to the Bush School. For more information, visit <http://bush.tamu.edu/certificate/cnsa> or call (979) 458-2276.

Program Requirements

Graduate Certificate in National Security Affairs (CNSA)

| Code | Title | Semester Credit Hours |
|-------------------------------|-----------------------------------------------|-----------------------|
| Select four of the following: | | 12 |
| INTA 651 | National Security Policy | |
| INTA 689 | Special Topics in... (U.S. Military Policy) | |
| INTA 650 | National Security Law | |
| INTA 652 | The Role of Intelligence in Security Affairs | |
| INTA 657/ PSAA 657 | Terrorism in Today's World | |
| INTA 689 | Special Topics in... (International Security) | |
| INTA 689 | Special Topics in... (Deterrence) | |
| INTA 659 | Transnational Security Issues | |
| Total Semester Credit Hours | | 12 |

Department of International Affairs

<http://bush.tamu.edu/degree/mpia>

Head: F. Gregory Gause, III

The Department of International Affairs offers graduate study leading to the degrees of Master of International Affairs and Executive Master of International Policy. Both degrees prepare students for a professional career in the field of international affairs, both at the governmental level and at the non-governmental level.

Faculty

Castillo, Jasen J, Associate Professor
International Affairs
PHD, University of Chicago, 2003

Gause III, Francis G, Professor
International Affairs
PHD, Harvard University, 1987

Gottlieb, Jessica A, Assistant Professor
International Affairs
PHD, Stanford University, 2013

Hamie, Christine S, Instructional Assistant Professor
International Affairs
PHD, University of York, 2007

Hermann, Charles F, Senior Professor
International Affairs
PHD, Northwestern University, 1995

Huang, Reyko, Assistant Professor
International Affairs
PHD, Columbia University, 2012

Hudson, Valerie M, Professor
International Affairs
PHD, The Ohio State University, 1983

Layne, Christopher, Distinguished Professor
International Affairs
PHD, University of California, Berkeley, 1981

Marin Thornton, Gabriela, Instructional Associate Professor
International Affairs
PHD, University of Miami, 2006

Mu, Ren, Associate Professor
International Affairs
PHD, Michigan State University, 2004

Napper, Larry C, Professor of the Practice
International Affairs
MS, University of Virginia, 1974

Natsios, Andrew S, Executive Professor
International Affairs
PHD, Harvard University, 1979

Norris, William J, Associate Professor
International Affairs
PHD, Massachusetts Institute of Technology, 2010

Olson, James M, Professor of the Practice
International Affairs
JD, The University of Iowa, 1969

Ross, Andrew L, Professor
International Affairs
PHD, Cornell University, 1984

Ruyle, Leslie E, Lecturer
International Affairs
PHD, University of Georgia, 2012

Schuessler, John M, Associate Professor
International Affairs
PHD, The University of Chicago, 2007

Sievert, Ronald J, Associate Professor of the Practice
International Affairs
JD, The University of Texas - Austin, 1977

Snider, Erin A, Assistant Professor
International Affairs
PHD, University of Cambridge, Trinity College, 2011

Sowell, Jesse Horton, Assistant Professor
International Affairs
PHD, Massachusetts Institute of Technology, 2015

Tabaar, Mohammad A, Associate Professor
International Affairs
PHD, Georgetown University, 2012

Masters

- Executive Master of International Policy in International Policy (p. 989)
- Master of International Affairs (INTA) and Master of Public Health (HPCH) Combined Degree Program (p. 982)
- Master of International Affairs (INTA) and Master of Public Health (PHPM) Combined Degree Program (p. 986)
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Certificates

- Advanced International Affairs Certificate (p. 991)

Master of International Affairs in International Affairs

The Bush School of Government and Public Service offers a non-thesis program leading to the degree of **Master of International Affairs (MIA)**. This program is designed for individuals planning careers in international affairs. Courses are intended for those with such interests, and it enables a student to specialize in one of two career tracks: international development and economic policy and national security and diplomacy. The degree entails 48 credit hours of study.

The Master of International Affairs degree includes a core curriculum of five courses, a summer internship or intensive language and cultural study and a six-course specialization in two selected areas of concentration. The professional nature of the program provides a curriculum taught by a multi-disciplinary faculty who also combine a mix of scholarly and professional international experience. The core curriculum includes seminars in leadership, international politics, global economy, research methods, and American foreign policy. One of those six core courses must be a Capstone. The Capstone involves a group project under the supervision of a faculty member to work on a research task received from a real world client. Capstone research culminates in a major written report to the client. The Bush School International Affairs department equips students having a disposition toward leadership and public service with the vital skills and knowledge critical for successful careers whether in government or non-governmental organizations. A foreign language background is not required for admission into the program. To graduate, however, a student must successfully pass a foreign language exam administered in accordance with the ratings of the American Council on the Teaching of Foreign Languages. For this test the student must demonstrate a minimal proficiency in speaking and comprehension at the established rating of "intermediate low."

The International Affairs department, in conjunction with the Economics department, also offers a dual degree program that enables students to receive both their Economics undergraduate degree and a Master of International Affairs (MIA) degree in international development and economic policy in five years. Students admitted into this program will be enrolled in Bush School graduate courses with an undergraduate classification for the fall and spring of their fourth year and will be

re-classified as master's degree students upon completing 120 credit hours, typically following the second semester. To be eligible for the joint program, students must have at least a 3.25 GPA and must have completed 102 credit hours, including the specific course prerequisites either for a Bachelor of Arts or a Bachelor of Science degree in Economics, as well as the courses required by the College of Liberal Arts and by Texas A&M University for an undergraduate degree, by the end of their third year. Students who are admitted will complete the same two-year, 48-hour curriculum and language requirement as other students admitted to the Bush School's Master of International Affairs.

The International Affairs department, in conjunction with the International Studies department in the College of Liberal Arts, also offers a dual degree program that enables students to receive both their International Studies undergraduate Bachelor of Arts degree and a Master of International Affairs graduate degree in five years. Students admitted to the joint degree program must have at least a 3.5 GPA and must have completed 102 credit hours, including all of their prerequisite courses within the politics and diplomacy emphasis track in the International Studies department, by the end of their third year. Students admitted into this program will be enrolled in Bush School graduate courses with an undergraduate classification for the fall and spring of the fourth year and will be reclassified as master's degree students upon completing 120 credit hours, typically in the following fall semester. Admitted students are required to complete all courses required by the College of Liberal Arts and Texas A&M University for an undergraduate degree and the same 48 hour curriculum as other students admitted to the Bush School's Master of International Affairs.

For additional information on the international affairs degree at the Bush School, including requests for admissions materials, please contact: Bush School, Texas A&M University, 4220 TAMU, College Station, Texas 77843-4220, email bushschooladmissions@tamu.edu or visit the website at <http://bush.tamu.edu>.

Program Requirements

- Student's Advisory Committee (p. 980)
- Degree Plan (p. 980)
- Credit Requirements (p. 981)
- Transfer of Credit (p. 981)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 981)
- Final Examination (p. 981)

Student's Advisory Committee

The International Affairs department MIA student's advisory committee consists of the student's designated faculty advisor and the Department Head of the International Affairs department, who has the responsibility of approving the proposed degree plan for an INTA student. The Department Head or the student's advisor serves as chair. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than dates**

announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpss.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 48 semester credit hours of approved courses that include a core curriculum of five courses, a summer internship or intensive language and cultural study, and a specialized track of study is required for the Masters Degree of International Affairs.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply.

Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR, with the exception of courses taken at the Texas A&M University Health Science Center.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses taken are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The Bush School does not require a comprehensive final examination for completion of the Masters Degree of International Affairs.

Additional Requirements

- Residence (p. 982)
- Time Limit (p. 982)

- Foreign Languages (p. 982)
- Internship or Practicum (p. 982)
- Application for Degree (p. 982)

Residence

A student must complete 12 hours in resident study at Texas A&M University to satisfy the residence requirement for the Master in International Affairs.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework that is more than seven calendar years old at the time of graduation may not be used to satisfy degree requirements.

Foreign Languages

A foreign language background is not required for admission into the program. To graduate, however, a student must successfully pass a foreign language exam administered in accordance with the ratings of the American Council on the Teaching of Foreign Languages. For this test the student must demonstrate a minimal proficiency in speaking and comprehension at the established rating of "intermediate low."

Internship or Practicum

During the summer term a student has the option of either participating in an internship related to the student's international career plans or enrolling in an intensive foreign language and cultural study. Internships in the United States or abroad provide practical experience in an organization or agency engaged in the conduct of some dimension of world affairs. A student who requires more preparation to successfully complete the foreign language test requirement may substitute enrollment in an approved immersion-type program of language instruction in place of the internship. A person who takes his/her language instruction at an institution other than Texas A&M University must obtain admission and cover all costs.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of International Affairs (INTA) and Master of Public Health (HPCH) Combined Degree Program

The Bush School of Government and Public Service and the School of Public Health offer a Master of International Affairs (INTA) and Master of Public Health (HPCH) Combined Degree Program.

Program Requirements

Master of International Affairs in International Affairs (p. 982)

Master of Public Health in Health Promotion and Community Health Sciences (p. 983)

Master of International Affairs in International Affairs

- Student's Advisory Committee (p. 982)
- Degree Plan (p. 982)
- Credit Requirement (p. 982)
- Transfer of Credit (p. 983)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 983)
- Final Examination (p. 983)

Student's Advisory Committee

The International Affairs department MIA student's advisory committee consists of the student's designated faculty advisor and the Department Head of the International Affairs department, who has the responsibility of approving the proposed degree plan for an INTA student. The Department Head or the student's advisor serves as chair. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 48 semester credit hours of approved courses that include a core curriculum of five courses, a summer internship or intensive

language and cultural study, and a specialized track of study is required for the Masters Degree of International Affairs.

For students enrolled in the collaborative degree program that leads to the Master of International Affairs degree and the Master of Public Health degree, 36 credits from the Bush School are required plus 12 credits from an approved list of courses in the School of Public Health.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work.** Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR, with the exception of courses taken at the Texas A&M University Health Science Center.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:

- Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:

- A maximum of 8 hours of 684 (Professional Internship) and/or
- A maximum of 8 hours of 685 (Directed Studies), and
- Up to 3 hours of 690 (Theory of Research), and
- Up to 3 hours of 695 (Frontiers in Research).

5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).

7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.

8. No credit hours of 691 (Research) may be used.

9. Continuing education courses may not be used for graduate credit.

10. Extension courses taken are not acceptable for credit.

11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The Bush School does not require a comprehensive final examination for completion of the Masters Degree of International Affairs.

Master of Public Health in Health Promotion and Community Health Sciences

Program Requirements

- Student's Advisory Committee (p. 984)
- Degree Plan (p. 984)
- Credit Requirement (p. 984)
- Transfer of Credit (p. 984)

- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 984)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 (<http://catalog.tamu.edu/search/?P=SOPH%20680>) as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

In case of established collaborative degree programs, a minimum of 42 hours of coursework is required for the Master of Public Health Degree.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework

submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Master of International Affairs in International Affairs (p. 982)

Master of Public Health in Health Promotion and Community Health Sciences (p. 985)

Master of International Affairs in International Affairs

Additional Requirements

- Residence (p. 985)
- Time Limit (p. 985)
- Foreign Languages (p. 985)
- Internship or Practicum (p. 985)
- Application for Degree (p. 985)

Residence

A student must complete 12 hours in resident study at Texas A&M University to satisfy the residence requirement for the Master in International Affairs.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework that is more than seven calendar years old at the time of graduation may not be used to satisfy degree requirements.

Foreign Languages

A foreign language background is not required for admission into the program. To graduate, however, a student must successfully pass a foreign language exam administered in accordance with the ratings of the American Council on the Teaching of Foreign Languages. For this test the student must demonstrate a minimal proficiency in speaking and comprehension at the established rating of "intermediate low."

Internship or Practicum

During the summer term a student has the option of either participating in an internship related to the student's international career plans or enrolling in an intensive foreign language and cultural study. Internships in the United States or abroad provide practical experience in an organization or agency engaged in the conduct of some dimension of world affairs. A student who requires more preparation to successfully complete the foreign language test requirement may substitute enrollment in an approved immersion-type program of language instruction in place of the internship. A person who takes his/her language instruction at an institution other than Texas A&M University must obtain admission and cover all costs.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of Public Health in Health Promotion and Community Health Sciences

Additional Requirements

- Residence (p. 985)
- Time Limit (p. 985)
- Scholastic Requirements (p. 985)
- Foreign Languages (p. 985)
- Internship or Practicum (p. 985)
- Application for Degree (p. 986)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684 (<http://catalog.tamu.edu/search/?P=PHEB%20684>), PHEO 684 (<http://catalog.tamu.edu/search/?P=PHEO%20684>), PHPM 684 (<http://catalog.tamu.edu/search/?P=PHPM%20684>), and HPCH 684 (<http://catalog.tamu.edu/search/?P=HPCH%20684>). Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their

department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of International Affairs (INTA) and Master of Public Health (PHPM) Combined Degree Program

The Bush School of Government and Public Service and the School of Public Health offer a Master of International Affairs (INTA) and Master of Public Health (PHPM) Combined Degree Program.

Program Requirements

Master of International Affairs in International Affairs (p. 986)

Master of Public Health in Health Policy and Management (p. 987)

Master of International Affairs in International Affairs Program Requirements

- Student's Advisory Committee (p. 986)
- Degree Plan (p. 986)
- Credit Requirements (p. 986)
- Transfer of Credit (p. 986)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 986)
- Final Examination (p. 987)

Student's Advisory Committee

The International Affairs department MIA student's advisory committee consists of the student's designated faculty advisor and the Department Head of the International Affairs department, who has the responsibility of approving the proposed degree plan for an INTA student. The Department Head or the student's advisor serves as chair. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 48 semester credit hours of approved courses that include a core curriculum of five courses, a summer internship or intensive language and cultural study, and a specialized track of study is required for the Masters Degree of International Affairs.

For students enrolled in the collaborative degree program that leads to the Master of International Affairs degree and the Master of Public Health degree, 36 credits from the Bush School are required plus 12 credits from an approved list of courses in the School of Public Health.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work.** Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR, with the exception of courses taken at the Texas A&M University Health Science Center.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:

- Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
- Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:

- A maximum of 8 hours of 684 (Professional Internship) and/or
- A maximum of 8 hours of 685 (Directed Studies), and
- Up to 3 hours of 690 (Theory of Research), and
- Up to 3 hours of 695 (Frontiers in Research).

5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).

7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.

8. No credit hours of 691 (Research) may be used.

9. Continuing education courses may not be used for graduate credit.

10. Extension courses taken are not acceptable for credit.

11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The Bush School does not require a comprehensive final examination for completion of the Masters Degree of International Affairs.

Master of Public Health in Health Policy and Management

Program Requirements

- Student's Advisory Committee (p. 987)
- Degree Plan (p. 987)
- Credit Requirement (p. 987)
- Transfer of Credit (p. 987)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 988)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 (<http://catalog.tamu.edu/search/?P=SOPH%20680>) as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

In the case of established collaborative degree programs, a minimum of 42 hours of coursework is required for the Master of Public Health degree.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's

advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Master of International Affairs in International Affairs (p. 986)

Master of Public Health in Health Policy and Management (p. 989)

Master of International Affairs in International Affairs

Additional Requirements

- Residence
- Time Limit
- Foreign Languages
- Internship or Practicum
- Application for Degree

Residence

A student must complete 12 hours in resident study at Texas A&M University to satisfy the residence requirement for the Master in International Affairs.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework that is more than seven calendar years old at the time of graduation may not be used to satisfy degree requirements.

Foreign Languages

A foreign language background is not required for admission into the program. To graduate, however, a student must successfully pass a foreign language exam administered in accordance with the ratings of the American Council on the Teaching of Foreign Languages. For this test the student must demonstrate a minimal proficiency in speaking and comprehension at the established rating of "intermediate low."

Internship or Practicum

During the summer term a student has the option of either participating in an internship related to the student's international career plans or enrolling in an intensive foreign language and cultural study. Internships in the United States or abroad provide practical experience in an organization or agency engaged in the conduct of some dimension of world affairs. A student who requires more preparation to successfully complete the foreign language test requirement may substitute enrollment in an approved immersion-type program of language instruction in place of the internship. A person who takes his/her

language instruction at an institution other than Texas A&M University must obtain admission and cover all costs.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of Public Health in Health Policy and Management

Additional Requirements

- Residence (p. 989)
- Time Limit (p. 989)
- Scholastic Requirements (p. 989)
- Foreign Languages (p. 989)
- Internship or Practicum (p. 989)
- Application for Degree (p. 989)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684 (<http://catalog.tamu.edu/search/?P=PHEB%20684>), PHEO 684 (<http://catalog.tamu.edu/search/?P=PHEO%20684>), PHPM 684 (<http://catalog.tamu.edu/search/?P=PHPM%20684>), and HPCH 684 (<http://catalog.tamu.edu/search/?P=HPCH%20684>). Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's

practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Executive Master of International Policy in International Policy

The Department of International Affairs offers an Executive Master of International Policy in International Policy.

Program Requirements

- Student's Advisory Committee (p. 989)
- Degree Plan (p. 989)
- Credit Requirements (p. 989)
- Transfer of Credit (p. 989)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 990)
- Final Examination (p. 990)

Student's Advisory Committee

The EMIP student's advisory committee consists of the EMIP coordinator faculty member and the Head of the Bush School's INTA Department. The Head of the Bush School's INTA Department has the responsibility of approving the proposed degree plan for an EMIP student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student in consultation with his or her advisory committee will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college and no later than the dates announced in the OGAPS calendar of deadlines for graduation.** This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>

Credit Requirements

A minimum of 30 semester credit hours of approved courses is required for the Executive Masters in International Policy program. Two courses are required: INTA 606 (International Politics in Theory and Practice) and INTA 608 (Fundamentals of the Global Economy). Students must complete at least 15 hours in one of INTA Department's two tracks: International Development and Economic Policy or National Security and Diplomacy. Other classes will be electives.

At least 24 hours must be taken on campus with an option to take six credit hours online if necessary. Two intensive courses in the International Affairs Department are offered every June, thus allowing students to complete the required 30 hours on campus within 11 months.

Transfer of Credit

All transfer credit is subject to Texas A&M University rules. Only graduate credits earned from accredited institutions with letter grades of 3.0 and higher qualify toward transfer credit. Students may transfer into the degree plan a maximum of nine graduate credit hours.

Transfer options include a choice of one of the options below or a combination of the options, not to exceed nine graduate credit hours of total transfer credit approval into the degree:

- a. Up to six credit hours of graduate courses taken from any of the Bush School's graduate certificates will automatically transfer into the EMIP without program director approval.
- b. The EMIP program director may approve up to six graduate credit hours from outside the Bush School of Government and Public Service to transfer into the EMIP from other accredited institutions.
- c. The EMIP program director may approve up to six graduate credit hours of Texas A&M University electives toward the degree's elective requirement.

A student who has earned 12 hours of graduate credit at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be

considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. No credit hours of 691 (Research) may be used.
 9. Continuing education courses may not be used for graduate credit.
 10. Extension courses taken are not acceptable for credit.
 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A comprehensive final examination is not required for the Executive Master in International Policy.

Additional Requirements

- Residence (p. 990)
- Time Limit (p. 991)
- Foreign Languages (p. 991)
- Internship or Practicum (p. 991)
- Application for Degree (p. 991)

Residence

The 30 graduate credit hour Executive Master in International Policy is offered fully in residence with an option of taking up to six credits online.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Executive Master in International Policy.

Internship or Practicum

An internship or practicum is not required for the Executive Master in International Policy.

Application for Degree

For information on applying for your degree, please visit the [Graduation](#) section.

Advanced International Affairs - Certificate

The Graduate Certificate in Advanced International Affairs is a multidisciplinary series of graduate courses for people whose careers or personal interest cause them to seek a more complete understanding of world affairs, but who may not have the time or need for a longer, residential graduate degree. These courses are taught by highly experienced faculty with practical experience as well as an academic background. A student admitted to the certificate program completes 12 credit hours of study typically involving four graduate-level courses available online or in residence. Some residential courses may not be available due to enrollment ceilings. The courses from which a student selects include intelligence, national security, diplomacy, foreign policy, international law, Middle-Eastern studies, political violence, and other international affairs-related courses.

An applicant must have a bachelor's degree from an accredited university and must meet certain other qualifications to be admitted to the certificate program. Students who are enrolled in a graduate program at Texas A&M may take individual courses. However, the student must be admitted to the certificate program and meet certificate completion requirements to earn the certificate.

An individual who successfully completes the certificate program will be awarded a certificate by Texas A&M University and the Bush School. Grades for courses taken as part of this program will appear on the official transcript, together with notation that the certificate has been achieved.

For more information, visit <http://bush.tamu.edu/caia/> or call (979) 862-7810, toll-free 1-866-988-2874 or email bushschoolonline@tamu.edu.

Program Requirements

Graduate Certificate Advanced International Affairs (CAIA)

Students must complete 12 credit hours of Bush School International Affairs courses with an overall grade point of 3.0 or higher. Students must apply for completion and have an approved certificate degree audit in order to earn the certificate.

Students must choose a total of four courses.

| Code | Title | Semester Credit Hours |
|----------------------------------------------|----------------------------------------------------------------------------------|-----------------------|
| Select four from the following: ¹ | | 12 |
| INTA 601 | Leadership in International Affairs: Institutions, Organizations and People | |
| INTA 603 | American Diplomacy | |
| INTA 604 | Politics of the Contemporary Middle East | |
| INTA 605 | American Foreign Policy Since World War II | |
| INTA 606 | International Politics in Theory and Practice | |
| INTA 608 | Fundamentals of the Global Economy | |
| INTA 609 | International Law and its Application to Human Rights, Use of Force and U.S. Law | |
| INTA 611 | Authoritarianism and Political Elites in the Arab World | |
| INTA 612/PSAA 668 | U.S. Law and Homeland Security | |
| INTA 613 | Diplomatic Negotiations: A U.S. Embassy Perspective | |
| INTA 615 | Democratization as Foreign Policy | |
| INTA 616 | Economic Development in China | |
| INTA 617 | Deterrence and Coercion | |
| INTA 618 | Government and Homeland Security | |
| INTA 620 | International Security | |
| INTA 621 | Chinese Foreign Policy | |
| INTA 622 | Chinese Strategic Thought | |
| INTA 623 | Grand Strategy | |
| INTA 625 | International Trade Policy Analysis | |
| INTA 626 | Balance of Payments in Theory and Policy | |
| INTA 627 | Foundations of Strategy and Statecraft | |
| INTA 629 | Multinational Enterprises | |
| INTA 630 | International Economic Development | |
| INTA 631 | U.S. Military Power | |
| INTA 632 | Advanced Economic Development | |
| INTA 633 | POLITICAL CONSEQUENCE DEVELOPMENT | |
| INTA 634 | Politics and Development Policies | |
| INTA 635 | Great Famines, War and Disaster Response | |
| INTA 636 | International Development in Theory and Practice | |
| INTA 637 | Field Research Methods | |
| INTA 638 | Political Economy of Development in Africa | |
| INTA 639 | Homeland Security and Emergency Management | |

| | |
|-----------------------|----------------------------------------------------------------------|
| INTA 640 | The Politics and Practice of the Democracy Promotion |
| INTA 642 | Institutions and Development |
| INTA 643 | International Organizations |
| INTA 645 | Women and Nations |
| INTA 646 | Foreign Policy Analysis |
| INTA 647 | State Building and State Failure in the Developing World |
| INTA 648 | Contemporary Civil Wars |
| INTA 650 | National Security Law |
| INTA 651 | National Security Policy |
| INTA 652 | The Role of Intelligence in Security Affairs |
| INTA 653 | Technical Collections Systems for International Security |
| INTA 654 | Military Strategy in the Conduct of Nations |
| INTA 655 | Nationalism, Immigration and Terrorism in the European Union |
| INTA 657/ PSAA 657 | Terrorism in Today's World |
| INTA 658 | Congress and International Security |
| INTA 659 | Transnational Security Issues |
| INTA 661 | NATO from Military Alliance to Collective Security |
| INTA 662 | Intelligence Threats to National Security in the Modern Era |
| INTA 663 | International Transfer Pricing |
| INTA 664 | The Middle East State System |
| INTA 665 | National Security and Defense Planning |
| INTA 667 | International Crisis Management: The Policy Process |
| INTA 668 | The Politics and History of the Arab Spring |
| INTA 669/ NUEN 669 | Nuclear Terrorism Threat Assessment and Analysis |
| INTA 671 | The Political Economy of the Middle East |
| INTA 672 | East Asian Security |
| INTA 673 | Chinese Domestic Politics in Transition |
| INTA 674 | U.S. Foreign Policy in the Persian Gulf |
| INTA 675 | Religion and Politics in Iran |
| INTA 676 | International Politics of the Middle East |
| INTA 677 | Islam in International Politics |
| INTA 678 | Interstate War: Theory and History Implications for the 21st Century |
| INTA 680 | Political Violence and Terrorism within the International System |
| INTA 682 | Law of War |
| INTA 686 | Russia and International Politics |

| | |
|----------|----------------------------------------|
| INTA 688 | Alliance Politics: Theory and Practice |
| INTA 689 | Special Topics in... |

| | |
|-----------------------------|----|
| Total Semester Credit Hours | 12 |
|-----------------------------|----|

¹ Certain Bush School Homeland Security courses may count toward one elective requirement with CAIA Certificate Director approval.

Department of Public Service and Administration

Head: Lori L. Taylor

The Department of Public Service and Administration seeks to develop principled leaders for the public and nonprofit sectors, providing students with the tools and knowledge they need in order to perform effectively and ethically in a time when public servants face new and increased challenges. The department offers the Master of Public Service and Administration degree, as well as the graduate certificate in Nonprofit Management, the graduate certificate in Public Management and the graduate certificate in Homeland Security.

Faculty

Ashley III, Frank B, Senior Professor
Public Service & Administration
EDD, The University of Alabama, 1986

Bowman, Ann O, Professor
Public Service & Administration
PHD, University of Florida, 1979

Bright Jr, Leonard A, Associate Professor
Public Service & Administration
PHD, Portland State University, 2003

Brown, William A, Professor
Public Service & Administration
PHD, Claremont Graduate University, 2000

Bullock, Justin B, Assistant Professor
Public Service & Administration
PHD, The University of Georgia, 2014

Cole, Stacy C, Lecturer
Public Service & Administration
PHD, Texas A&M University, 2016

Cortes, Kalena E, Associate Professor
Public Service & Administration
PHD, University of California at Berkeley, 2002

Dague, Laura A, Associate Professor
Public Service & Administration
PHD, University of Wisconsin, 2012

Davis, Danny W, Associate Professor of the Practice
Public Service & Administration
PHD, Texas A&M University, 2003

Graham Jr, Cole B, Executive Professor
Public Service & Administration
PHD, University of South Carolina, 1971

Greer, Robert A, Assistant Professor
Public Service & Administration
PHD, University of Kentucky, 2013

Griffin, James M, Senior Professor
Public Service & Administration
PHD, University of Pennsylvania, 1971

Hilderbrand, Mary E, Associate Professor of the Practice
Public Service & Administration
PHD, Harvard University, 1992

House, Donald, Lecturer
Public Service & Administration
PHD, Texas A&M University, 2005

Kerr, Deborah L, Professor of the Practice
Public Service & Administration
PHD, The University of Texas at Austin, 1982

Lahey, Joanna N, Associate Professor
Public Service & Administration
PHD, Massachusetts Inst of Technology, 2005

Marchbanks III, Miner P, Lecturer
Public Service & Administration
PHD, Texas A&M University, 2005

McIntyre, David H, Lecturer
Public Service & Administration
PHD, University of Maryland - College Park, 1999

Meier, Kenneth J, Distinguished Professor
Public Service & Administration
PHD, Syracuse University, 1975

Mumpower, Jeryl L, Professor Emeritus
Public Service & Administration
PHD, University of Colorado, 1976

Portney, Kent E, Professor
Public Service & Administration
PHD, Florida State University, 1979

Qu, Heng, Assistant Professor
Public Service & Administration
PHD, Indiana University Purdue University Indianapolis, 2016

Robichau, Robbie, Assistant Professor
Public Service & Administration
PHD, Arizona State University, 2013

Sullivan, Ronald D, Lecturer
Public Service & Administration
JD, University of Kansas, 2014

Taylor, Kenneth A, Assistant Professor of the Practice
Public Service & Administration
PHD, Our Lady of the Lake University, 2017

Taylor, Lori L, Professor
Public Service & Administration
PHD, University of Rochester, 1990

Vedlitz, Arnold, Professor
Public Service & Administration
PHD, University of Houston, 1975

West, William F, Professor
Public Service & Administration
PHD, Rice University, 1981

Masters

- Executive Master of Public Service and Administration in Public Service and Administration (p. 993)
- Master of Public Service and Administration (PSAA) and Doctor of Philosophy (EDAD) Collaborative Degree Program (p. 997)
- Master of Public Service and Administration (PSAA) and Doctor of Philosophy (HRSA) Collaborative Degree Program (p. 1004)
- Master of Public Service and Administration in Public Service and Administration (p. 995)

Certificates

- Homeland Security Certificate (p. 1010)
- Nonprofit Management Certificate (p. 1011)
- Public Management Certificate (p. 1011)

Executive Master of Public Service and Administration in Public Service and Administration

The Bush School of Government and Public Service offers a 39 graduate credit hour **online**, non-thesis **Executive Master of Public Service and Administration (EMPSA)** program leading to a Master of Public Service and Administration degree. The program is designed for individuals, executives and managers with at least five years cumulative experience in public service—including at least three years at the middle-to-upper level. The program requires one week in residence on the Texas A&M University campus in College Station, Texas, two separate times during the program for a total of a two week residence period.

The EMPSA program develops an executive student's strategic thinking skills, budgetary proficiencies, research abilities, and management expertise in order to prepare principled leaders for public service who will effectively lead in complex and rapidly evolving public service fields—in particular the areas of homeland security, nonprofit management, or public management. The program is delivered online to serve a population of professionals, who due to the scope of their responsibilities, are unable to attend an in-residence academic program.

Students may select between the three tracks of Homeland Security, Nonprofit Management, or Public Management. Students who have professional or executive-level experience will be provided unique development opportunities throughout their study to strengthen and enhance executive-level decision making skills.

For more information, visit <http://bush.tamu.edu/empsa> or call (979) 862-7810, toll-free 1-866-988-2874 or email bushschoolonline@tamu.edu.

Program Requirements

- Student's Advisory Committee (p. 994)
- Degree Plan (p. 994)

- Credit Requirements (p. 994)
- Transfer of Credit (p. 994)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 994)
- Final Examination (p. 995)

Student's Advisory Committee

The EMPSA student's advisory committee consists of the student's designated faculty advisor (who is the track coordinator for the student's specified track area) and the Head of the Bush School's PSAA Department, who has the responsibility of approving the proposed degree plan for an EMPSA student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student in consultation with his or her advisory committee, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the OGAPS calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

Credit Requirement

A minimum of 39 semester credit hours of approved courses are required for the Executive Master of Public Service and Administration Program: six common courses, two track core courses, three track elective courses, and a two-semester capstone sequence.

Transfer of Credit

Choose **one** of the transfer credit options below or a combination of the options, not to exceed 12 graduate credit hours of transfer credit approval into the degree:

- Up to 12 credit hours of graduate courses successfully completed in the Bush School's Graduate Certificate in Advanced International Affairs, the Graduate Certificate in Homeland Security, the Graduate Certificate in Nonprofit Management program, or the Graduate Certificate in Public Management program.
- The PSAA Department Head may approve up to six graduate credit hours from outside of the Bush School of Government and Public Service to transfer into the Executive Master of Public Service and Administration (EMPSA) from other accredited institutions.

A student who has earned 12 hours of graduate credit at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree

plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.

8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the Master of Public Service and Administration.

Additional Requirements

- Residence (p. 995)
- Time Limit (p. 995)
- Foreign Languages (p. 995)
- Internship or Practicum (p. 995)
- Application for Degree (p. 995)

Residence

A student must complete a total of two required weeks in residence, typically scheduled one week each summer, at Texas A&M University in College Station to satisfy the residence requirement for the Executive Master of Public Service and Administration degree.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Public Service and Administration degree.

Internship or Practicum

An internship or practicum is not required for the Executive Master of Public Service and Administration degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Public Service and Administration in Public Service and Administration

The Bush School of Government and Public Service offers an interdisciplinary, non-thesis program leading to the **Master of Public Service and Administration (MPSA)** degree. The MPSA curriculum provides a professional education for those seeking careers at any level of government or in the nonprofit sector. It includes a solid academic and practical grounding in management and policy analysis, as well as an opportunity to refine critical leadership skills such as team building, motivation, conflict resolution, and effective written and oral communication. The MPSA program is fully accredited by the Network of Schools of Public Policy, Affairs, and Administration (<http://www.naspaa.org>) (NASPAA).

The PSAA Department offers a two-year, full-time course of study in one of three tracks: Nonprofit Management, Public Management, or Public Policy Analysis. In addition, students have the option to choose a concentration in a substantive area such as analytical methods; cybersecurity policy; education policy and management; energy, environment, and technology policy and management; health policy and management; international nongovernmental organizations; security policy and management; state and local government policy and management; or they may design their own concentration in consultation with their advisor. The program includes a non-credit-bearing internship and two semesters of capstone policy seminars which give students the opportunity to apply their knowledge and skills to a real-world problem or issue.

The Public Service and Administration Department, in conjunction with the College of Liberal Arts, also offers dual degree programs which enable students to receive a Political Science, Economics, or Sociology undergraduate degree and a Master of Public Service and Administration (MPSA) degree in five years. Students admitted into one of the dual degree programs will be enrolled in Bush School graduate courses with an undergraduate classification for their fourth year. They will be reclassified as a graduate student upon completing 120 credit hours required for the undergraduate degree, typically after the end of the fourth year. To be eligible for admission into a dual degree program, students must have a GPA of at least 3.25 and must have completed 102 credit hours, including the specific course prerequisites either for a Bachelor of Arts or a Bachelor of Science degree in Political Science, Economics, or Sociology, as well as the courses required by the College of Liberal Arts and by Texas A&M University for an undergraduate degree by the end of their third year. Students who are admitted into the dual degree program will complete the same two-year, 48-hour curriculum as other students admitted to the Bush School's MPSA program.

The Public Service and Administration Department, in conjunction with the College of Agriculture and Life Sciences, also offers a dual degree program which enables students to receive an Agricultural Economics undergraduate degree and a Master of Public Service and Administration (MPSA) degree in five years. Students admitted into the dual degree program will be enrolled in Bush School graduate courses with an undergraduate classification for their fourth year. They will be reclassified as a graduate student upon completing 120 credit hours required for the undergraduate degree, typically after the end of the fourth year. To be eligible for admission into a dual degree program, students must have a GPA of at least 3.25 and must have completed 103 credit hours, including the specific course prerequisites for the Bachelor of Science degree in Agricultural Economics, as well as the courses required by the

College of Agriculture and Life Sciences and by Texas A&M University for an undergraduate degree by the end of their third year. Students who are admitted into the dual degree program will complete the same two-year, 48-hour curriculum as other students admitted to the Bush School's MPSA program.

The Public Service and Administration Department, in conjunction with the College of Education and Human Development, also offers a collaborative degree program (CDP). The CDP is designed for those individuals who intend to build an academic career focused on conducting research in the multidisciplinary field of education policy. This unique academic program will prepare individuals for careers in research universities and teaching colleges as well as for careers in consultancies or educational agencies of all types (private, non-profit, local, state, federal or international). As part of this specialized program of study, students will attain knowledge, skills, and abilities to conduct high quality research, present papers at scholarly conferences, and submit research articles for publication. Ultimately, students who successfully complete all program requirements will receive both a Master of Public Service and Administration (MPSA) degree from the Bush School of Government and Public Service and a Doctor of Philosophy in Educational Administration (Ph.D.) from the Department of Educational Administration and Human Resource Development, in the College of Education and Human Development.

For further information about the Bush School, including requests for admission materials, please contact: Bush School, Texas A&M University, 4220 TAMU, College Station, Texas 77843-4220, email bushschooladmissions@tamu.edu, or visit the website <http://bush.tamu.edu>.

Program Requirements

Student's Advisory Committee (p. 996)

Degree Plan (p. 996)

Credit Requirements (p. 996)

Transfer of Credit (p. 996)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 996)

Final Examination (p. 997)

Student's Advisory Committee

The MPSA student's advisory committee consists of the student's designated faculty advisor and the Head of the Bush School's PSAA Department, who has the responsibility of approving the proposed degree plan for an MPSA student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student in consultation with his or her advisory committee, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the OGAPS calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

Credit Requirement

A minimum of 48 semester credit hours of approved courses are required for the Master of Public Service and Administration Program: six common courses, two track core courses, two track elective courses, four additional elective courses, and a two-semester capstone sequence. Students without substantial professional experience are also required to complete a non-credit-bearing internship.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the Master of Public Service and Administration.

Additional Requirements

- Residence (p. 997)
- Time Limit (p. 997)
- Foreign Languages (p. 997)
- Internship or Practicum (p. 997)
- Application for Degree (p. 997)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Public Service and Administration degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along

with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Public Service and Administration degree.

Internship or Practicum

During the summer between their first and second year, a student participates in a non-credit-bearing internship related to his/her career plans. The internship requirement can be waived if the student has at least two years of recent professional-level public service experience related to his/her career goals and to the degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Public Service and Administration (PSAA) and Doctor of Philosophy (EDAD) Collaborative Degree Program

The Bush School of Government and Public Service offers a collaborative Master of Public Service and Administration and Doctor of Philosophy degree. The PSAA and EAHR Collaborative Degrees Program (CDP) is a coordinated educational effort of the Bush School and the College of Education and Human Development. The CDP is designed for those individuals who intend to build an academic career focused on conducting research in the multidisciplinary field of education policy. This unique academic program will prepare individuals for careers in research universities and teaching colleges as well as for careers in consultancies or educational agencies of all types (private, non-profit, local, state, federal or international). Ultimately, students who successfully complete all program requirements will receive both a Master of Public Service and Administration (MPSA) degree from the Bush School of Government and Public Service and a Doctor of Philosophy in Educational Administration (Ph.D.) from the Department of Educational Administration and Human Resource Development, in the College of Education and Human Development.

Program Requirements

Master of Public Service and Administration (p. 998)

Doctor of Philosophy in Educational Administration (p. 999)

Master of Public Service and Administration

- Student's Advisory Committee (p. 998)
- Degree Plan (p. 998)
- Credit Requirements (p. 998)
- Transfer of Credit (p. 998)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 998)
- Final Examination (p. 999)

Student's Advisory Committee

The MPSA student's advisory committee consists of the student's designated faculty advisor and the Head of the Bush School's PSAA Department, who has the responsibility of approving the proposed degree plan for an MPSA student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student in consultation with his or her advisory committee, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the OGAPS calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogdpss.tamu.edu>.

Credit Requirement

A minimum of 39 semester credit hours of approved courses are required for the Collaborative Degree Program track Master of Public Service and Administration Program: six common courses, two track core courses, three track elective courses, and a two-semester capstone sequence.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 8 hours of 684 (Professional Internship) and/or
 - A maximum of 8 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the Master of Public Service and Administration.

Doctor of Philosophy in Educational Administration

- Student's Advisory Committee (p. 999)
- Degree Plan (p. 999)
- Transfer of Credit (p. 1000)
- Research Proposal (p. 1000)
- Examinations (p. 1000)
 - Preliminary Examination (p. 1000)
 - Preliminary Examination Format (p. 1000)
 - Preliminary Examination Scheduling (p. 1001)
 - Report of Preliminary Examination (p. 1001)
 - Retake of Failed Preliminary Examination (p. 1001)
 - Final Examination (p. 1001)
 - Report of Final Examination (p. 1002)
- Dissertation (p. 1002)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty

member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 72 hours is required on the degree plan for the Collaborative Degree Program track Doctor of Philosophy in Educational Administration for a student who has completed a master's degree. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.

- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the

time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to

the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Master of Public Service and Administration (p. 1002)

Doctor of Philosophy in Educational Administration (p. 1003)

Master of Public Service and Administration

- Residence (p. 1002)
- Time Limit (p. 1002)
- Foreign Languages (p. 1002)
- Internship or Practicum (p. 1002)
- Application for Degree (p. 1002)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Public Service and Administration degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Public Service and Administration degree.

Internship or Practicum

During the summer between their first and second year, a student participates in a non-credit-bearing internship related to his/her career plans. The internship requirement can be waived if the student has at least two years of recent professional-level public service experience related to his/her career goals and to the degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Educational Administration

- Residence (p. 1003)
- Time Limit (p. 1003)
- Continuous Registration (p. 1003)
- Admission to Candidacy (p. 1003)
- Languages (p. 1003)
- 99-Hour Cap on Doctoral Degree (p. 1003)
- Application for Degree (p. 1004)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final

examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being

penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Public Service and Administration (PSAA) and Doctor of Philosophy (HRSA) Collaborative Degree Program

The Bush School of Government and Public Services and the School of Public Health offer a Master of Public Service and Administration (PSAA) and Doctor of Philosophy (HRSA) Collaborative Degree Program.

Program Requirements

Master of Public Service and Administration (p. 1004)

Doctor of Philosophy in Health Services Research (p. 1005)

Master of Public Service and Administration

- Student's Advisory Committee (p. 1004)
- Degree Plan (p. 1004)
- Credit Requirements (p. 1004)
- Transfer of Credit (p. 1004)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1004)
- Final Examination (p. 1005)

Student's Advisory Committee

The MPSA student's advisory committee consists of the student's designated faculty advisor as chair, a second PSAA faculty member as co-chair or member, both of whom has the responsibility of approving

the proposed degree plan for an MPSA student. When necessary, recommendations in cases of academic deficiency will be made to the Office of Graduate and Professional Studies.

Degree Plan

The student in consultation with his or her advisory committee, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the OGAPS calendar of deadlines for graduation.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>.

Credit Requirement

A minimum of 39 semester credit hours of approved courses are required for the Collaborative Degree Program track Master of Public Service and Administration Program: six common courses, two track core courses, three track elective courses, and a two-semester capstone sequence.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater, **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. No credit hours of 691 (Research) may be used.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

A final comprehensive examination is not required for the Master of Public Service and Administration.

Doctor of Philosophy in Health Services Research

Program Requirements

- Student's Advisory Committee (p. 1005)
- Degree Plan (p. 1006)
- Transfer of Credit (p. 1006)
- Research Proposal (p. 1006)
- Examinations (p. 1006)

- Preliminary Examination (p. 1006)
- Preliminary Examination Format (p. 1006)
- Preliminary Examination Scheduling (p. 1007)
- Report of Preliminary Examination (p. 1006)
- Retake of Failed Preliminary Examination (p. 1007)
- Final Examination (p. 1008)
- Report of Final Examination (p. 1008)
- Dissertation (p. 1008)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are**

given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.

- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake

the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Master of Public Service and Administration (p. 1008)

Doctor of Philosophy in Health Services Research (p. 1005)

Master of Public Service and Administration

- Residence (p. 1009)
- Time Limit (p. 1009)
- Foreign Languages (p. 1009)

- Internship or Practicum (p. 1009)
- Application for Degree (p. 1009)

Residence

A student must complete 12 credit hours in resident study at Texas A&M University to satisfy the residence requirement for the Master of Public Service and Administration degree.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See [Residence Requirements](#) (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Foreign Languages

A foreign language is not required for the Master of Public Service and Administration degree.

Internship or Practicum

During the summer between their first and second year, a student participates in a non-credit-bearing internship related to his/her career plans. The internship requirement can be waived if the student has at least two years of recent professional-level public service experience related to his/her career goals and to the degree.

Application for Degree

For information on applying for your degree, please visit the [Graduation](#) (p. 26) section.

Doctor of Philosophy in Health Services Research

- Residence (p. 1009)
- Time Limit (p. 1009)
- Continuous Registration (p. 1009)
- Admission to Candidacy (p. 1009)
- Languages (p. 1010)
- 99-Hour Cap on Doctoral Degree (p. 1010)
- Application for Degree (p. 1010)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See [Registration](#) (p. 27).

See [Residence Requirements](#) (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See [Continuous Registration Requirements](#) (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the [Graduation](#) (p. 26) section.

Homeland Security - Certificate

The Graduate Certificate in Homeland Security (Bush School of Government and Public Service) consists of instruction surveying the dimensions of homeland security and defense, from the traditional concepts of public safety to the emerging concepts of anti-terrorism and public security. Students may take courses in residence, web-based, or a combination of formats. The program is designed for individuals seeking careers with management or policy responsibilities at various levels of government, in the military, or in the private sector. After a required Fundamentals of Homeland Security course, students select from electives dealing with such topics as cyber security, critical infrastructure protection, weapons of mass destruction, domestic intelligence, business resilience and continuity, border security, the unconventional threat to the nation, homeland security and the law, and maritime security. Applicants must have an accredited bachelor's degree and meet other entry qualifications to be admitted to graduate study at Texas A&M University. Students who are currently enrolled in a graduate degree program at Texas A&M University may take individual courses; however, they must formally enroll in the certificate program and meet certificate completion requirements to earn the certificate. Certificate notation and grades for courses taken as part of this program will appear on the student's official Texas A&M University transcript.

For more information, visit <http://bush.tamu.edu/chls/> or call (979) 862-7810, toll-free 1-866-988-2874 or email bushschoolonline@tamu.edu.

Program Requirements

Graduate Certificate in Homeland Security (CHLS)

Students must complete 15 credit hours of Bush School Homeland Security in residence and/or online courses with an overall grade point of 3.0 or higher. All CHLS students must complete the required course of PSAA 656 Fundamentals of Homeland Security, and then an additional 12 credit hours of homeland security electives. Students may choose to take one online Advanced International Affairs (CAIA) course and apply it toward their CHLS program. Students must apply for completion and pass the certificate degree audit in order to earn the certificate.

Courses approved for the Graduate Certificate in Homeland Security Program include:

| Code | Title | Semester Credit Hours |
|-------------------------------|--------------------------------------------------------|-----------------------|
| Required Course | | |
| PSAA 656 | Fundamentals of Homeland Security | 3 |
| Electives | | 12 |
| Select four of the following: | | |
| PSAA 604 | Emergency Management and Homeland Security | |
| PSAA 605 | Homeland Security Policies, Strategies, and Operations | |

| | | |
|-----------------------------|------------------------------------------------------------------------|----|
| PSAA 607 | Research Methods for Homeland Security Studies | |
| PSAA 608/ CYBR 661 | Cybersecurity Policy, Issues and Operations - A Manager's Guide | |
| PSAA 620 | Safeguarding the Nation's Maritime Gateways | |
| PSAA 651 | Homeland Security and Homeland Defense | |
| PSAA 652 | Protection of the Nation's Critical Infrastructure | |
| PSAA 653 | Weapons of Mass Destruction | |
| PSAA 654 | U.S. Border Security: Policies, Strategies and Issues | |
| PSAA 655 | Domestic Intelligence Operations: Legalities, Policies, and Procedures | |
| PSAA 657/ INTA 657 | Terrorism in Today's World | |
| PSAA 658 | Disaster Recovery and Business Continuity | |
| PSAA 660 | Domestic Terrorism: The Internal Threat to America | |
| PSAA 668/ INTA 612 | U.S. Law and Homeland Security | |
| Total Semester Credit Hours | | 15 |

Nonprofit Management - Certificate

Students who complete the Graduate Certificate in Nonprofit Management will gain an understanding of the nonprofit sector, nonprofit organizational structures (i.e., legal frameworks and governance issues) and management practices appropriate to the nonprofit sector (i.e., strategy, volunteer behavior, and fundraising). With this preparation, students will be able to offer effective leadership in the management of nonprofit organizations.

Students who are currently enrolled in a graduate degree program at Texas A&M University may take individual courses in the certificate program. However, they must formally be admitted to the certificate program and meet all completion requirements to earn the certificate. An applicant must have an accredited bachelor's degree and meet certain other qualifications in order to be admitted.

An individual who successfully completes the certificate program will be awarded a certificate by Texas A&M University and the Bush School. Grades for courses taken as part of this program will appear on the official transcript, together with notation that the certificate has been achieved.

For more information, visit <http://bush.tamu.edu/cnpm/> or call (979) 862-7810, toll-free 1-866-988-2874 or email bushschoolonline@tamu.edu.

Program Requirements

Graduate Certificate in Nonprofit Management (CNPM)

The certificate requires students to complete 12 credit hours of graduate coursework with an overall grade point of 3.0 or higher in two required courses and two electives selected from an approved list. Certificate courses are offered in residence and online. All CNPM students must complete the required courses of PSAA 643 Foundations of the Nonprofit Sector and PSAA 644 Management and Leadership of Nonprofit Organizations as well as 6 credit hours from a variety of electives.

Students must apply for completion and have an approved certificate degree audit in order to earn the certificate.

Courses approved for the Graduate Certificate in Nonprofit Management Program include:

| Code | Title | Semester Credit Hours |
|-----------------------------------------------------|--------------------------------------------------------------------|-----------------------|
| Required Courses | | |
| PSAA 643 | Foundations of the Nonprofit Sector | 3 |
| PSAA 644 | Management and Leadership of Nonprofit Organizations | 3 |
| Electives | | |
| Select two of the following electives: ¹ | | 6 |
| PSAA 602 | Tools of Leadership in Public Service Organizations | |
| PSAA 603 | Nongovernmental Organization Management in International Settings | |
| PSAA 614 | Governance and Institutional Reform: A Comparative Perspective | |
| PSAA 616 | Managing Workplace Diversity in Public and Nonprofit Organizations | |
| PSAA 626 | Contract Management | |
| PSAA 630 | Program Evaluation in Public and Nonprofit Organizations | |
| PSAA 631 | Marketing for Nonprofit Organizations | |
| PSAA 632 | Fiscal Management for Nonprofits | |
| PSAA 633 | Philanthropy: Fundraising in Nonprofit Organizations | |
| PSAA 635 | Social Welfare and Health Policy | |
| PSAA 636 | Grant and Project Management in the Public and Nonprofit Sectors | |
| PSAA 642 | Ethics and Public Policy | |
| PSAA 648 | Performance Management in the Public and Nonprofit Sectors | |
| PSAA 649 | Volunteer and Human Resources in Nonprofit Organizations | |
| PSAA 669 | Legal Environment of Nonprofit Management | |
| Total Semester Credit Hours | | 12 |

¹ With certificate director approval, one course outside of the Bush School or Texas A&M University may count toward one course requirement in the certificate program.

Public Management - Certificate

The Certificate in Public Management (PBMG) focuses on the capabilities required for effective and ethical leadership in the public and nonprofit sectors. This includes the knowledge and skills pertaining to the internal operation of public-service organizations and to the relationship between those organizations and their environments.

The Graduate Certificate in Public Management is designed to provide graduate education in public management for the full-time public service professional who wants to earn a standalone credential in public management; for the individual who desires the education to transition to

the public management field; and for the graduate student who wants to earn a credential in a specialized area to enhance employability.

The certificate program is offered in a variety of formats including: online, on campus, or a combination of the two formats. Students may choose the format which best fits their needs. The culmination of the program will result in prepared state and federal leaders with the requisite skills and expertise in public service to excel in professional and executive management roles.

Program Requirements

Students must complete 12 credit hours (4 courses) of Bush School online and/or in-residence courses with an overall grade point of 3.0 or higher. All Graduate Certificate in Public Management students must complete the required courses PSAA 623 Budgeting in Public Service and PSAA 634 Public Management. In addition, students must complete two Graduate Certificate in Public Management elective courses.

The last semester the student completes coursework, the student is required to complete the Bush School's certificate completion form and the university required online degree audit. The student must meet all university requirements, and the student must achieve a GPA of 3.0 or higher in order to be awarded the graduate certificate. The certificate will be noted on the student's transcript.

Courses approved for the Graduate Certificate in Public Management include:

| Code | Title | Semester Credit Hours |
|------------------------------|--------------------------------------------------------------------|-----------------------|
| Required Courses | | |
| PSAA 623 | Budgeting in Public Service | 3 |
| PSAA 634 | Public Management | 3 |
| Electives | | |
| Select two of the following: | | 6 |
| PSAA 602 | Tools of Leadership in Public Service Organizations | |
| PSAA 604 | Emergency Management and Homeland Security | |
| PSAA 606 | Environmental Policy and Management | |
| PSAA 608/ CYBR 661 | Cybersecurity Policy, Issues and Operations - A Manager's Guide | |
| PSAA 610 | Comparative Public Administration and Management | |
| PSAA 614 | Governance and Institutional Reform: A Comparative Perspective | |
| PSAA 616 | Managing Workplace Diversity in Public and Nonprofit Organizations | |
| PSAA 619 | Urban Policy and Management | |
| PSAA 625 | Urban Sustainability Policies and Management | |
| PSAA 626 | Contract Management | |
| PSAA 630 | Program Evaluation in Public and Nonprofit Organizations | |
| PSAA 636 | Grant and Project Management in the Public and Nonprofit Sectors | |
| PSAA 637 | Decision Making in Government and Public Service | |

| | | |
|-----------------------------|-------------------------------------------------------------|----|
| PSAA 641 | Organization Theory for the Public Sector | |
| PSAA 642 | Ethics and Public Policy | |
| PSAA 644 | Management and Leadership of Nonprofit Organizations | |
| PSAA 646 | Accountability in Public Service | |
| PSAA 648 | Performance Management in the Public and Nonprofit Sectors | |
| PSAA 661 | Human Resources Management in Government and Public Service | |
| PSAA 670 | Public Information Systems Management | |
| Total Semester Credit Hours | | 12 |

Coursework Outside the Bush School: The Graduate Certificate in Public Management Director may approve up to one related course from outside of the Bush School to count toward curriculum requirements. Any transfer credit must follow all university rules. The course must match the Public Management curriculum; must be no older than five years; must be transferred from an accredited institution; and, the student must have earned a B or better in the transfer course. No more than three credit hours of coursework outside the Bush School may be used toward the Graduate Certificate in Public Management.

School of Law

<http://law.tamu.edu>

Administrative Officers

Dean - Robert B. Ahdieh, J.D.

Senior Associate Dean - Gary Lucas, J.D., LL.M.

Associate Dean of Academic Affairs - Terri Lynn Helge, J.D.

Associate Dean for Special Projects - William Byrnes, J.D., S.J.D.

Associate Dean for Global Programs and Graduate Programs - Charlotte Ku, Ph.D.

Associate Dean for Experiential Education - Luz Herrera, J.D.

Associate Dean for Research - Timothy Mulvaney, J.D.

Associate Dean for Assessment, Strategic Analysis, and Reporting - Milan Markovic, J.D.

Associate Dean for Academic Support, Bar Passage, and Compliance - James McGrath, J.D., LL.M.

About the School of Law

The law school enrolls first-year students in the fall of each academic year. Applicants to the law school are not required to complete any specific pre-law curriculum or coursework. Applicants are encouraged to choose a course of study that emphasizes writing, analytical thinking, problem solving and critical reading.

Admission Information (p. 36)

Masters

- Juris Master of Health Care Law (p. 1013)
- Master of Jurisprudence (p. 1018)
- Master of Jurisprudence in Intellectual Property (p. 1020)
- Master of Laws (p. 1013)
- Master of Laws in Intellectual Property (p. 1016)

First Professional Doctoral

- Juris Doctor (p. 1013)

Juris Master in Health Care Law

The School of Law offers a Juris Master in Health Care Law.

For more information, please go to law.tamu.edu.

Juris Doctor

School of Law Admission Information (<http://catalog.tamu.edu/graduate/admission/college-school-information/law>)

Curriculum

The curriculum consists of lockstep courses (required courses that must be taken in a prescribed sequence), advanced required courses, core curriculum electives, and general curriculum electives. In addition to providing a solid grounding in the basics of the law, the school's curriculum offers many opportunities for students to take courses in a variety of specialized areas and programs and to learn those practical skills essential to students' success in law practice.

The full-time day division program is a three-year course of study consisting of 12-week fall and spring semesters. The part-time program is generally a four-year course of study consisting of 12-week fall and spring semesters. A seven-week summer session with a limited course schedule is offered.

Lockstep Courses

All entering students must complete required lockstep courses. For the prescribed lockstep course sequence for each division, consult the School of Law Academic Standards in the Student Handbook (<http://law.tamu.edu/docs/default-source/current-students/Student-Handbook-2018-19-08-10-18.pdf?sfvrsn=2>).

Advanced Required Courses

In addition to the required lockstep courses, all students must successfully complete certain upper-level advanced requirements prior to graduation. For more information, consult the School of Law Academic Standards in the Student Handbook (<http://law.tamu.edu/docs/default-source/current-students/Student-Handbook-2018-19-08-10-18.pdf?sfvrsn=2>).

Academic Deficiency and Readmission

At the end of the first semester (fall), any student with a grade point average below 1.90 will be dismissed for academic deficiency. A student who was previously dismissed for academic deficiency and is restarting the law school program is required to have a grade point average of 2.33 at the end of the fall semester. At any time after two semesters in the law school, a student with a grade point average below 2.33 will be dismissed for academic deficiency. The School of Law Academic Standards govern

probation, restart, and reapplication. For more information, consult the School of Law Academic Standards in the Student Handbook (<http://law.tamu.edu/docs/default-source/current-students/Student-Handbook-2018-19-08-10-18.pdf?sfvrsn=2>).

Program Requirements

The JD degree is conferred on students who satisfactorily complete a minimum of 90 credit hours with a cumulative grade point of 2.33 or better. In addition, each student must complete an upper-level rigorous writing requirement, a six-hour experiential requirement, and a 30-hour *pro bono* requirement. Students must complete their degree requirements within 72 months of starting law school.

First Year

| Fall | | Semester Credit Hours |
|-----------------------|-----------------------------------|-----------------------|
| LAW 7110 | Professional Identity | .5 |
| LAW 7001 | Analysis, Research, and Writing I | 3 |
| LAW 7005 | Civil Procedure | 4 |
| LAW 7042 | Torts | 4 |
| LAW 7418 | Legislation and Regulation | 3 |
| Semester Credit Hours | | 14.5 |

Spring

| | | |
|-----------------------|-------------------------------------|------|
| LAW 7017 | Contracts | 4 |
| LAW 7032 | Property | 4 |
| LAW 7002 | Analysis, Research, and Writing II | 3 |
| LAW 7007 | Alternate Dispute Resolution Survey | 1 |
| LAW 7110 | Professional Identity | .5 |
| LAW 7021 | Criminal Law | 3 |
| Semester Credit Hours | | 15.5 |

Second Year

| | | |
|---------------------------------------|-----------------------------|----|
| LAW 7010 | Constitutional Law | 4 |
| LAW 7091 | Professional Responsibility | 3 |
| Upper level electives ^{1, 2} | | 23 |
| Semester Credit Hours | | 30 |

Third Year

| | | |
|---------------------------------------|--|----|
| Upper level electives ^{1, 2} | | 30 |
| Semester Credit Hours | | 30 |
| Total Semester Credit Hours | | 90 |

¹ Students must successfully complete a minimum of six credit hours in one or more upper-level experiential courses. As part of the six credit hours, the student must successfully complete an approved externship or a clinic that involves advising or representing one or more actual clients or serving as a third-party neutral. An experiential course must be a simulation course, a law clinic, or a field placement.

² One LARW III course is required.

Master of Laws

The Master of Laws (LL.M.) program provides a concentrated post-graduate legal study program for practicing lawyers or graduates of foreign or domestic law schools. Candidates for this program include: 1) foreign lawyers and law graduates seeking training in U.S. legal doctrine

and skills; and 2) U.S. lawyers and law graduates wishing to pursue an advanced study in chosen areas of focus.

Students have the option to pursue a thesis or non-thesis Master of Laws degree. Students may be enrolled on either a full-time or part-time basis.

All Master of Laws (LL.M.) students must complete 24 credit hours including at least three upper-level courses in one of the following focus areas:

- Business and Commercial Law
- Global Business and Legal Practice
- Dispute Resolution
- Criminal Law
- Natural Resources Law
- Wealth Management
- Risk Management

Students who do not have a Juris Doctor from an A.B.A.-approved law school must take a concentrated introductory course on the U.S. legal and business environment, Introduction to the U.S. Legal System. This course will familiarize students with the structure of the U.S. legal system and fundamentals of legal reasoning and analysis.

All students must take an upper-level writing or drafting course.

For more information, please go to law.tamu.edu.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1014)
- Degree Plan (p. 1014)
- Credit Requirements (p. 1014)
- Transfer of Credit (p. 1014)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1014)
- Non-Thesis Option (p. 1015)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Laws (LLM) student's advisory committee consists of (1) the coordinating faculty member of the student's program and (2) the Associate Dean for Graduate Studies, who has the responsibility of approving the proposed degree plan for the LLM student.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Laws degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 24 semester credit hours of approved courses and research is required for the thesis option Master of Laws degree.

A minimum of 24 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the Master of Laws program.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Laws degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Laws degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Laws degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1015)
- Continuous Registration (p. 1015)
- Time Limit (p. 1015)
- Foreign Languages (p. 1016)
- Application for Degree (p. 1016)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Laws, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Laws program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Laws degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of Laws in Intellectual Property

The Master of Laws in Intellectual Property (LL.M.in I.P.) program provides a concentrated post-graduate legal study program for practicing lawyers or graduates of foreign or domestic law schools. Candidates for this program include: 1) foreign lawyers who studied in law school programs that do not offer I.P. classes or who want to strengthen their knowledge base with an I.P. law degree from the United States; and 2) general practitioners who want to develop an I.P. specialization.

Students have the option to pursue a thesis or non-thesis Master of Laws in Intellectual Property degree. Students may be enrolled on either a full-time or part-time basis.

All Master of Laws in Intellectual Property (LL.M. in IP) students must complete 24 credit hours.

Unless waived by the School of Law, students must complete at least six credits from approved Intellectual Property core courses, six credits from approved Intellectual Property elective courses, one professional skills course, and an upper-level writing course.

Foreign LL.M. in I.P. students must also take Introduction to the U.S. Legal System. This course will familiarize students with the structure of the U.S. legal system, fundamentals of legal reasoning and analysis, and core concepts in the major areas of U.S. doctrinal law.

For the remainder of their required credit hours, LL.M. in I.P. students may enroll in any School of Law courses approved for the LL.M. in IP program.

For more information, please go to law.tamu.edu.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1016)
- Degree Plan (p. 1016)
- Credit Requirements (p. 1016)
- Transfer of Credit (p. 1017)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1017)
- Non-Thesis Option (p. 1017)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Laws in Intellectual Property student's advisory committee consists of (1) the coordinating faculty member of the student's program and (2) the Associate Dean for Graduate Studies, who has the responsibility of approving the proposed degree plan for the Master of Laws in Intellectual Property student.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Laws degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 24 semester credit hours of approved courses and research is required for the thesis option Master of Laws degree.

A minimum of 24 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for

either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the Master of Laws in Intellectual Property program.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Laws degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Laws degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Laws degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1017)
- Continuous Registration (p. 1018)
- Time Limit (p. 1018)
- Foreign Languages (p. 1018)
- Application for Degree (p. 1018)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Laws, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Laws program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Laws degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of Jurisprudence

The Master of Jurisprudence program (M.Jur.) is designed for graduate students and professionals who are interested in acquiring legal skills and competencies to enhance their career opportunities. The M.Jur. degree will provide a solid foundation in the law and related skills. Students must complete 30 credit hours and will work with the program advisor to design their program that will include courses from one of five focus areas.

Students have the option to pursue a thesis or non-thesis Master of Jurisprudence degree. Students may be enrolled on either a full-time or part-time basis.

All Master of Jurisprudence students must complete 30 credit hours including at least two courses in one of the following focus areas:

- Business and Commercial Law
- Global Business and Legal Practice
- Dispute Resolution
- Criminal Law
- Natural Resources Law
- Wealth Management
- Risk Management

Students must take Introduction to the U. S. Legal System and complete a writing or drafting course.

For more information, please go to law.tamu.edu.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1018)
- Degree Plan (p. 1018)
- Credit Requirements (p. 156)
- Transfer of Credit (p. 1019)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1019)
- Non-Thesis Option (p. 1020)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Jurisprudence (M.Jur.) student's advisory committee consists of (1) the coordinating faculty member of the student's program and (2) the Associate Dean for Graduate Studies, who has the responsibility of approving the proposed degree plan for the M.Jur. student.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Jurisprudence degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Jurisprudence degree.

A minimum of 30 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's

own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

A final comprehensive examination is not required for the Master of Jurisprudence program.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Jurisprudence degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Jurisprudence degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Jurisprudence degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1020)
- Continuous Registration (p. 1020)
- Time Limit (p. 1020)
- Foreign Languages (p. 1020)
- Application for Degree (p. 1020)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Jurisprudence, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Jurisprudence program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Jurisprudence degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

Master of Jurisprudence in Intellectual Property

The Master of Jurisprudence in Intellectual Property program (M.Jur.) offers a year of concentrated study in intellectual property law for both professionals and graduate students in related disciplines who are interested in acquiring legal knowledge and skills to enhance their careers and develop new professional opportunities. Candidates will include: 1) non-lawyer professionals who would benefit from education and training in intellectual property in fields such as engineering, business development, public policy and entrepreneurship; 2) individuals who currently do not have or are not completing a law degree but who are in positions that would benefit from greater knowledge of IP law and policy such as government officials, industry executives, technology developers, and journalists; and 3) students in related disciplines

who would benefit from advanced knowledge of IP law and policy for academic research and career development.

Students have the option to pursue a thesis or non-thesis Master of Jurisprudence in Intellectual Property degree. Students may be enrolled on either a full-time or part-time basis.

All Master of Jurisprudence in Intellectual Property students must complete 30 credit hours.

Unless waived by the School of Law, students must take Introduction to the U.S. Legal System and complete six credits of approved core Intellectual Property courses, six credits from approved elective Intellectual Property courses, one professional skills course, and one upper-level writing course related to the student's course of study.

With approval of the School of Law, Master of Jurisprudence students may enroll in up to six credit hours of a technical elective in an interdisciplinary, related area of the student's expertise.

For the remainder of their required credit hours, Master of Jurisprudence students may enroll in any School of Law courses approved for the Master of Jurisprudence program.

For more information, please go to law.tamu.edu. (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/law/intellectual-property-mjr/file:///C:/Users/rkrolczyk/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/E5JU5FVL/law.tamu.edu>)

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1021)
- Degree Plan (p. 1021)
- Credit Requirements (p. 1021)
- Transfer of Credit (p. 1021)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1022)
- Non-Thesis Option (p. 1022)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

The Master of Jurisprudence in Intellectual Property student's advisory committee consists of (1) the coordinating faculty member of the student's program and (2) the Associate Dean for Graduate Studies, who has the responsibility of approving the proposed degree plan for the Master of Jurisprudence in Intellectual Property student.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Jurisprudence degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Jurisprudence degree.

A minimum of 30 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses**On-Campus and Distance Education Degree Programs**

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option**On-Campus and Distance Education Degree Programs**

A final comprehensive examination is not required for the Master of Jurisprudence in Intellectual Property.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Jurisprudence degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Jurisprudence degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Jurisprudence degree other than those specified above are the same as for the thesis option degree.

For more information, please go to law.tamu.edu. (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/law/intellectual-property-mjr/file:///C:/Users/rkrolczyk/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/E5JU5FVL/law.tamu.edu>)

Additional Requirements**Additional Requirements**

- Residence (p. 1022)
- Continuous Registration (p. 1023)
- Time Limit (p. 1023)
- Foreign Languages (p. 1023)
- Application for Degree (p. 1023)

Residence**On-Campus Degree Program**

In partial fulfillment of the residence requirement for the degree of Master of Jurisprudence, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Jurisprudence program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Jurisprudence degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements/#graduation>) section.

College of Liberal Arts

<http://liberalarts.tamu.edu>

Administrative Officers

Dean - Pamela R. Matthews, Ph.D.

Associate Dean for Faculty - Violet Johnson, Ph.D.

Associate Dean for Undergraduate Programs - Steven M. Oberhelman, Ph.D.

Associate Dean for Inclusive Excellence and Strategic Initiatives - Leroy G. Dorsey, Ph.D.

Associate Dean for Research and Graduate Education - Maria C. Escobar-Lemmon, Ph.D.

Associate Dean for Information Technology and Facilities - Paul Wellman, Ph.D.

Assistant Dean for Finance and Operations - Kristine Brisco

Graduate education in the College of Liberal Arts prepares students for careers in academia, government, and non-profit and private sector positions that require specialized knowledge in a social or behavioral science or humanities discipline. Our faculty are engaged in influential programs of research and bring transformative teaching to the graduate experience.

The College offers Master's and Ph.D. degrees in Anthropology, Communication, Economics, English, Hispanic Studies, History, Philosophy, Political Science, Psychology, and Sociology, as well as Master's degrees in Maritime Archeology and Conservation and Performance Studies. Programs in the College offer graduate certificates that permit further specialization in Africana Studies, Film and Media Studies, Latino/a and Mexican American Studies, and Women's and Gender Studies for students enrolled in graduate degree programs within the University. The Department of Anthropology offers a certificate in Conservation Training that is available to degree-seeking and non-degree seeking students.

The College of Liberal Arts participates in an intercollegiate certificate program, Digital Humanities (p. 144), that is open to degree-seeking students within the University.

Departments

Departments

Department of Anthropology (p. 1026)
 Department of Communication (p. 1040)
 Department of Economics (p. 1051)
 Department of English (p. 1062)
 Department of Hispanic Studies (p. 1074)
 Department of History (p. 1084)
 Department of International Studies (p. 1095)
 Department of Performance Studies (p. 1096)
 Department of Philosophy and Humanities (p. 1100)
 Department of Political Science (p. 1110)
 Department of Psychological and Brain Sciences (p. 1121)
 Department of Sociology (p. 1145)

Interdepartmental Programs

- Africana Studies Certificate (p. 1023)
- Film and Media Studies Certificate (p. 1024)
- Latino/a and Mexican American Studies Certificate (p. 1025)
- Women's and Gender Studies Certificate (p. 1025)

Interdepartmental Programs

Certificates

- Africana Studies Certificate (p. 1023)
- Film and Media Studies Certificate (p. 1024)
- Latino/a and Mexican American Studies Certificate (p. 1025)
- Women's and Gender Studies Certificate (p. 1025)

Africana Studies - Certificate

This interdisciplinary certificate is offered by the Africana Studies program in the College of Liberal Arts. It offers interested masters or doctoral students an opportunity to develop an interdisciplinary graduate

concentration in Africana Studies, while at the same time earning a degree in a disciplinary major field. In addition to gaining knowledge of peoples and of issues with particular significance to the Africana world, students pursuing this certificate will also benefit from the interdisciplinary training that is the hallmark of Africana Studies. They will be exposed to the scholarship, methods, and theories of the multiple disciplines that contribute to the critical analysis and understanding of the Africana world. Awarding of the Africana Studies Certificate requires that the certificate candidate complete 12 hours of Africana Studies approved coursework and receive a grade of at least a B in each course completed. More detailed information on the Africana Studies program is available on our website (<http://afst.tamu.edu>).

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------------------|------------------------------------------|-----------------------|
| AFST 601 | Methods of Inquiry Into Africana Studies | 3 |
| Humanities elective | | 3 |
| Social and behavioral sciences elective | | 3 |
| Approved free elective | | 3 |
| Total Semester Credit Hours | | 12 |

Film and Media Studies - Certificate

Administered by the Film Studies Program, the Graduate Certificate in Film and Media Studies offers masters and doctoral students an interdisciplinary concentration in the study of film and other visual- and sound-based media that will enhance students' major field of study. By combining film courses in such diverse areas as Communication, English, History, European and Classical Languages, Hispanic Studies, Performance Studies, Philosophy, and Visualization, students can create a program of study that will enrich their understandings of the global and interdisciplinary dimensions of the media culture environment. The graduate certificate is open to any Texas A&M University student seeking a masters or doctoral degree.

The Graduate Certificate consists of 12 hours of coursework, including one required course, COMM 662 (or equivalent, to be approved by the Film Studies coordinator). Additional Details: 3 hours must be taken outside the student's home department; 3 hours may be a 300-level or above undergraduate course; if a student's thesis or dissertation contains a significant film focus, up to 3 hours of thesis or dissertation research hours may count toward the certificate.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------------------------------------------|-----------------------------------------|-----------------------|
| Required Courses | | |
| COMM 662 | Survey of Media Studies (or equivalent) | 3 |
| Elective Courses | | |
| Select three of the following (only one undergraduate course may be applied): | | 9 |
| Upper Division Undergraduate Film Courses: | | |
| FILM 343/ | Sex, Gender and Cinema | |
| WGST 343 | | |

| | | |
|--------------------------------------------------------|----------------------------------------------------------|----|
| FILM 351/ | Advanced Film | |
| ENGL 351 | | |
| FILM 356/ | Literature and Film | |
| ENGL 356 | | |
| FILM 376/ | Philosophy, Film and Evil | |
| PHIL 376 | | |
| FILM 394 | Studies in Film Genre | |
| FILM 401 | National Cinema History | |
| FILM 402 | Intermedia Performance | |
| MUSC 402 | Intermedia Performance | |
| PERF 402 | Intermedia Performance | |
| FILM 405/ | European Cinema | |
| EURO 405 | | |
| FILM 406/ | Propaganda and Dissidence | |
| EURO 406 | | |
| FILM 415/ | The Ancient World in Film | |
| CLAS 415 | | |
| FILM 425/ | French Film | |
| FREN 425 | | |
| FILM 435/ | German Film | |
| GERM 435 | | |
| FILM 455/ | Italian Cinema | |
| ITAL 455 | | |
| FILM 481 | Seminar in Film Studies | |
| FILM 489 | Special Topics in... | |
| Graduate Courses (3 hours of research may be applied): | | |
| COMM 634 | Communication and Gender | |
| COMM 645 | Rhetorical and Textual Methods in Communication Research | |
| COMM 662 | Survey of Media Studies | |
| COMM 663 | Seminar in Media Studies | |
| COMM 665 | Communication and Technology | |
| ENGL 658/ | Topics in Film History | |
| FILM 658 | | |
| ENGL 659 | Topics in Film Theory | |
| EURO 605 | European Cinema | |
| HISP 672 | Hispanic Film and Performance Arts | |
| PERF 601 | Theories of Performance Studies | |
| PERF 603 | Performance, Power, and Identity | |
| Graduate Courses Outside the College of Liberal Arts: | | |
| VIZA 611 | Concepts of Visual Communications I | |
| VIZA 612 | Concepts of Visual Communications II | |
| VIZA 641 | Visual Storytelling | |
| VIZA 643 | Time Based Media I | |
| VIZA 644 | Time Based Media II | |
| Total Semester Credit Hours | | 12 |

Up to three hours of a 691 course may count toward the certificate if a student's thesis or dissertation contains a significant focus on film.

Depending on content, the following courses may count toward the certificate (with approval of the Film Studies Program director):

| Code | Title | Semester Credit Hours |
|----------|--------------------------------------------|-----------------------|
| ENGL 666 | Topics in Textual Studies and Book History | |
| EURO 604 | European Avantgardes | |
| PHIL 630 | Aesthetics | |
| SOCI 657 | Seminar in Culture | |
| WGST 645 | Queer Theory | |

Latino/a and Mexican American Studies - Certificate

The Graduate Certificate in Latino/a and Mexican American Studies offers all graduate students at Texas A&M University an opportunity to develop an interdisciplinary graduate concentration in Latino/a and Mexican American Studies while pursuing a degree in a disciplinary degree. Latino/a and Mexican American Studies is an interdisciplinary field of study focused on issues connected with Mexican Americans, Puerto Ricans, and other US-based Latino/a communities. The certificate ensures that students have developed core knowledge and appreciation for interdisciplinary scholarship in this area. Students must take four courses, with two in the social sciences and two in the humanities. At least one course must be from the list of core courses. Students are required to earn an A, B, or P in all courses. Students are also required to make one professional presentation—local, national, or international—of their LMAS-related work.

Program Requirements

Students must take four courses, two in the social sciences and two in the humanities.

| Code | Title | Semester Credit Hours |
|---------------------------------|---------------------------------------------------------|-----------------------|
| Humanities Electives | | 6 |
| Select two from the following: | | |
| ENGL 670 | Topics in Latino/a Literature and Culture | |
| HISP 606 | Spanish in the United States | |
| HISP 625 | U.S. Hispanic Literature and Culture | |
| HISP 646 | Seminar in Cultural Encounters and Borders | |
| HISP 670 | Seminar in U.S. Hispanic Literature | |
| HISP 671 | Bilingualism in the Spanish-speaking World | |
| HIST 674 | Readings in Chicano-Latino History ¹ | |
| HIST 675 | Research Seminar in Chicano-Latino History ¹ | |
| HIST 678 | Readings in the Southwest and its Borders | |
| HIST 679 | Research Seminar in the Southwest and its Borders | |
| PERF 625 | Latino/a Expressive Culture | |
| Social Science Electives | | 6 |

Select two from the following:

| | |
|----------|-----------------------------------------------------------------------------------|
| CPSY 637 | Latino Psychology |
| EDCI 710 | The Hispanic Learner in Urban Settings |
| POLS 674 | Seminar in Race, Ethnicity and American Politics |
| SOCI 663 | Black and Latino Americans |
| SOCI 667 | Seminar in Race and Ethnic Relations (Mexican Americans and Latinos) ¹ |
| SOCI 667 | Seminar in Race and Ethnic Relations (U.S.-Mexico Border) ¹ |

| | |
|-----------------------------|----|
| Total Semester Credit Hours | 12 |
|-----------------------------|----|

¹ At least one course must be from these core courses.

Women's and Gender Studies - Certificate

The graduate certificate in Women's and Gender Studies offers master's and doctoral students the benefits of gaining an interdisciplinary concentration in gender, while earning an advanced degree within a discipline. The Women's and Gender Studies Certificate aims to enhance critical thinking and methodological skills while facilitating analysis of gender, sex, and sexuality and their roles in culture, society and the arts. Pursuing the WGST Certificate encourages the development of innovative research that combines recent scholarship in gender studies with the student's major area of study.

The Women's and Gender Studies program offers courses on a variety of themes pertaining to gender, sex, and sexuality, in relation to health, queer theory, film, religion, language, social movements, science, and the workplace. Courses span both humanities and social sciences and draw on a number of approaches to inquiry including qualitative, quantitative, rhetorical, and historical.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------|--------------------|-----------------------|
| Select one of the following: | | 3 |
| WGST 680/ | Theories of Gender | |
| ENGL 680 | | |
| WGST 645 | Queer Theory | |
| WGST 401 | Feminist Theory | |
| WGST electives ^{1,2} | | 9 |
| Total Semester Credit Hours | | 12 |

¹ A minimum of 3 credit hours must be outside of the student's degree-seeking home discipline.

- ² Up to 6 hours of Elective requirement can be (but not required to be) fulfilled by applying up to 2 of the following:
- 3 hours from a 685 can count toward certificate, with prior authorization by WGST Graduate Coordinator.
 - 3 hours from a 691 can count toward certificate if a student's dissertation/thesis substantially engages WGST, with authorization by WGST Graduate Coordinator.
 - 3 hours from a course that is not cross-listed or pre-approved can be applied with authorization by the WGST Graduate Coordinator.

Department of Anthropology

<http://anthropology.tamu.edu>

Head: C. A. Werner

Director of Graduate Studies: L. Wright

Director of Undergraduate Studies: S. Athreya

The Department of Anthropology offers programs of study and research leading to a PhD in anthropology. Students admitted to the PhD program may elect to earn an MA en route to their terminal degree. Additionally, a MS in Maritime Archaeology and Conservation is offered as a separate track. Students enrolled within these programs receive training preparing them for professional research and/or teaching careers in academic institutions, governmental agencies, museums or private industry. The department has a well-rounded program in anthropology with offerings in archaeology, biological anthropology and cultural anthropology. The department is particularly noted for its strength and emphasis in the fields of nautical archaeology, the archaeology of the first Americans, archaeological conservation, palynology and paleoethnobotany, behavioral ecology, economic anthropology, globalization, biological anthropology, and zooarchaeology.

Once admitted to the graduate program, students concentrate their academic and research efforts in one or more areas within the Department of Anthropology. The degree plan is prepared by the individual student with the assistance of a faculty advisory committee and the coursework is kept flexible (within the guidelines of graduate studies) in order to allow students to pursue their individual professional goals. In addition, whenever possible graduate students are encouraged to gain teaching and/or research experience as assistants within the department.

Faculty

Alvard, Michael S, Associate Professor
Anthropology
PHD, University of New Mexico, 1993

Athreya, Sheela, Associate Professor
Anthropology
PHD, Washington University in St. Louis, 2003

Bryant Jr, Vaughn M, Professor
Anthropology
PHD, The University of Texas - Austin, 1969

Carlson, David L, Professor
Anthropology
PHD, Northwestern University, 1979

Carlson, Deborah N, Associate Professor
Anthropology
PHD, University of Texas at Austin, 2004

Castor, Nicole M, Assistant Professor
Anthropology
PHD, University of Chicago, 2009

Crisman, Kevin J, Professor
Anthropology
PHD, University of Pennsylvania, 1989

De Ruiter, Darryl J, Professor
Anthropology
PHD, University of the Witwatersrand, South Africa, 2001

Dostal, Christopher M, Assistant Professor
Anthropology
PHD, Texas A&M University, 2017

Goebel, Frank E, Professor
Anthropology
PHD, University of Alaska Fairbanks, 1993

Graf, Kelly E, Associate Professor
Anthropology
PHD, University of Nevada, Reno, 2008

Green, Thomas A,
Anthropology
PHD, University of Texas, 1974

Gursky, Sharon, Professor
Anthropology
PHD, State University of New York at Stony Brook, 1997

Hamilton, Donny L, Professor
Anthropology
PHD, University of Texas, 1975

Hopkins, Allison L, Assistant Professor
Anthropology
PHD, University of Florida, 2009

Laporte, Catharina M, Instructional Assistant Professor
Anthropology
PHD, Texas A&M University, 2013

Linderholm, Anna E, Assistant Professor
Anthropology
PHD, Stockholm University - Sweden, 2008

Lynch, Darrell W, Lecturer
Anthropology
PHD, University of Tennessee, 2014

Pulak, Cemalettin M, Professor
Anthropology
PHD, Texas A&M University, 1996

Thakar, Heather B, Assistant Professor
Anthropology
PHD, University of California Santa Barbara, 2014

Thoms, Alston V, Professor
Anthropology
PHD, Washington State University, 1989

Vieira-De-Castro, Luis, Professor
Anthropology
PHD, Texas A&M University, 2001

Wachsmann, Shelley A, Professor
Anthropology
PHD, Institute of Archaeology, Hebrew University, 1991

Waters, Michael R, Distinguished Professor
Anthropology
PHD, The University of Arizona, 1980

Werner, Cynthia A, Professor
Anthropology
PHD, Indiana University, 1997

Winking, Jeffrey W, Associate Professor
Anthropology
PHD, The University of New Mexico, 2005

Wright, Lori E, Professor
Anthropology
PHD, University of Chicago, 1994

Facilities

Thirteen fully-equipped, modern laboratories help the Department of Anthropology carry out its primary function of teaching and providing research facilities for its staff, students and faculty. Two research centers provide opportunities for graduate students to participate in active research projects around the world. The Center for Maritime Archaeology and Conservation conducts underwater excavations around the world and conducts research in new conservation methods for waterlogged artifacts. The Center for the Study of the First Americans conducts excavations on the earliest sites in the Americas and their likely precursors in northeast Asia. The department is affiliated with the Institute of Nautical Archaeology which provides support for research projects involving nautical archaeology and maintains research and laboratory facilities in Bodrum, Turkey. The department also boasts a new ancient genetics laboratory, opening Fall 2016.

Students also work in collaboration with other campus research centers including the stable isotope lab in Geology, the Center for Chemical Characterization in Chemistry (induced neutron activation analysis and inductively coupled plasma mass spectrometry with laser ablation), the Electron Microscopy Lab, the GIS and Remote Sensing Lab in Geography, and the Center for Heritage Conservation in Architecture.

Masters

- Master of Arts in Anthropology (p. 1027)
- Master of Science in Maritime Archaeology and Conservation (p. 1036)

Doctoral

- Doctor of Philosophy in Anthropology (p. 1030)

Certificates

- Conservation Training Certificate (p. 1040)

Master of Arts in Anthropology

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

The MA in Anthropology is restricted to students who are currently enrolled in the PhD in Anthropology and looking to earn their MA en route. It is not open to outside applicants.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1027)
- Degree Plan (p. 1028)
- Credit Requirement (p. 1028)
- Transfer of Credit (p. 1028)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1028)
- Thesis Option (p. 1029)
 - Thesis Proposal (p. 1029)
 - Final Examination/Thesis Defense (p. 1029)
- Non-Thesis Option (p. 1030)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily

separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies.

Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.

- Not more than 3 hours of 695 (Frontiers in Research) may be used.
- 5. A maximum of 2 hours of Seminar (681).
- 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
- 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
- 8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).
- 9. Continuing education courses may not be used for graduate credit.
- 10. Extension courses are not acceptable for credit.
- 11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
- 12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different

committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1030)
- Continuous Registration (p. 1030)
- Time Limit (p. 1030)
- Foreign Languages (p. 1030)
- Application for Degree (p. 1030)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Anthropology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <p>For more information about specific department requirements for the PhD, please see https://anthropology.tamu.edu/graduate-overview/graduate-coursework/.</p> | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1032)
- Degree Plan (p. 1032)
- Transfer of Credit (p. 1032)
- Research Proposal (p. 1033)
- Examinations (p. 1033)
 - Preliminary Examination (p. 1033)
 - Preliminary Examination Format (p. 1033)
 - Preliminary Examination Scheduling (p. 1033)
 - Report of Preliminary Examination (p. 1034)
 - Retake of Failed Preliminary Examination (p. 1034)

- Final Examination (p. 1034)
- Report of Final Examination (p. 1034)
- Dissertation (p. 1035)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its

equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;

- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.

- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional

Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee

member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1035)
- Time Limit (p. 1035)
- Continuous Registration (p. 1035)
- Admission to Candidacy (p. 1035)
- Languages (p. 1036)
- 99-Hour Cap on Doctoral Degree (p. 1036)
- Application for Degree (p. 1036)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

- 5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Maritime Archaeology and Conservation

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity and which culminates in an original thesis.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1037)
- Degree Plan (p. 1037)
- Credit Requirements (p. 1038)
- Transfer of Credit (p. 1038)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1038)
- Thesis Option (p. 1038)
 - Thesis Proposal (p. 1039)
 - Final Examination/Thesis Defense (p. 1039)
- Non-Thesis Option (p. 1039)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional

Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

Students pursuing the Master of Science in Maritime Archaeology and Conservation are only able to pursue the thesis-option.

Additional Requirements

Additional Requirements

- Residence (p. 1039)
- Continuous Registration (p. 1040)
- Time Limit (p. 1040)
- Foreign Languages (p. 1040)
- Application for Degree (p. 1040)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional

Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Conservation Training - Certificate

The Conservation Training Certificate provides a student with a thorough knowledge of the latest artifact conservation methods and their application. Artifacts recovered from underwater sites are unstable when recovered and immediate conservation is necessary to ensure that the artifact does not deteriorate once out of the water. The certificate consists of formal courses in artifact conservation and practical application of that knowledge. Traditional approaches to artifact conservation are covered in detail as well as methods recently developed. The certificate is available to currently admitted degree seeking and non-degree seeking graduate students.

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|----------------------------------------------------|-----------------------|
| ANTH 605 | Conservation of Archaeological Resources I | 4 |
| ANTH 606 | Conservation of Archaeological Resources II | 4 |
| ANTH 617 | Conservation III—Preservation of Organic Materials | 3 |
| ANTH 685 | Directed Studies | 1 |
| Total Semester Credit Hours | | 12 |

Department of Communication

<http://communication.tamu.edu>

Head: J. Kevin Barge

Graduate Adviser: Kristan Poirot

The Department of Communication offers two graduate degrees: the Doctor of Philosophy and the Master of Arts. Graduate students may create an individualized program of study, selecting coursework from the department's five areas of specialization: (1) Communication, Politics, and Policy, (2) Health Communication, (3) Organizational Communication, (4) Media, Culture, and Identity, and (5) Rhetoric and Public Affairs.

Faculty

Barge, James K, Professor
Communication
PHD, University of Kansas, 1985

Blanton, Hart C, Professor
Communication
PHD, Princeton University, 1994

Braman, Sandra, Professor
Communication
PHD, University of Minnesota - Twin Cities, 1988

Burkart, Patrick C, Professor
Communication
PHD, University of Texas, 2000

Campbell, Heidi A, Professor
Communication
PHD, The University of Edinburgh, 2002

Conrad, Charles R, Professor
Communication
PHD, Kansas University, 1972

Coombs, William T, Professor
Communication
PHD, Purdue University, 1990

Crick, Nathan A, Professor
Communication
PHD, University of Pittsburgh, 2005

Dorsey, Leroy G, Professor
Communication
PHD, Indiana University, 1993

Dubriwny, Tasha N, Associate Professor
Communication
PHD, University of Georgia, 2005

Dunaway, Johanna L, Associate Professor
Communication
PHD, Rice University, 2006

Goidel, Robert K, Professor
Communication
PHD, University of Kentucky, 1993

Hess Carney, Zoe Lynn, Lecturer
Communication
PHD, Georgia State University, 2017

Holladay, Sherry J, Professor
Communication
PHD, Purdue University, 1992

La Pastina, Antonio C, Associate Professor
Communication
PHD, The University of Texas - Austin, 1999

Lopez, Joseph, Lecturer
Communication
PHD, The University of Texas at Austin, 2010

Lueck, Jennifer A, Assistant Professor
Communication
PHD, University of Minnesota, 2016

May, Matthew S, Associate Professor
Communication
PHD, University of Minnesota, 2009

Means Coleman, Robin Renee, Professor
Communication
PHD, Bowling Green State University, 1996

Mercieca, Jennifer R, Associate Professor
Communication
PHD, University of Illinois at Urbana - Champaign, 2003

Miller, Jeremy R, Lecturer
Communication
PHD, Texas A&M University, 2012

Munson, David N, Lecturer
Communication
PHD, Texas A&M University, 2018

Parish, Nancy B, Instructional Assistant Professor
Communication
PHD, University of Florida, 2013

Poirot, Kristan A, Associate Professor
Communication
PHD, University of Georgia, 2004

Ramasubramanian, Srividya, Professor
Communication
PHD, Pennsylvania State University, 2004

Rauscher, Emily A, Assistant Professor
Communication
PHD, University of Missouri, 2012

Rold, Michael F, Lecturer
Communication
PHD, Louisiana State University, 2014

Stephenson, Michael, Professor
Communication
PHD, University of Kentucky, 1999

Street Jr, Richard L, Professor
Communication
PHD, The University of Texas at Austin, 1980

Sumpter, Randall S, Associate Professor
Communication
PHD, University of Texas, 1996

Tang, Lu, Associate Professor
Communication
PHD, University of Southern California, 2007

Tarvin, David T, Lecturer
Communication
PHD, Louisiana State University, 2013

Wallis, Cara J, Associate Professor
Communication
PHD, University of Southern California, 2008

Wesner, Kylene J, Instructional Assistant Professor
Communication
PHD, Texas A&M University, 2014

Wolfe, Anna W, Assistant Professor
Communication
PHD, Ohio University, 2013

Masters

- Master of Arts in Communication (p. 1041)

Doctoral

- Doctor of Philosophy in Communication (p. 1045)

Certificates

- International Communication and Public Diplomacy Certificate (p. 1051)

Master of Arts in Communication

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

The MA program in Communication is research-oriented and allows students to develop a generalized program of study that explores the following areas: (1) Communication, Politics, & Policy, (2) Health

Communication, (3) Organizational Communication, (4) Media, Culture, & Identity, and (5) Rhetoric & Public Affairs.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1042)
- Degree Plan (p. 1042)
- Credit Requirement (p. 1042)
- Transfer of Credit (p. 1042)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1043)
- Thesis Option (p. 1043)
 - Thesis Proposal (p. 1043)
 - Final Examination/Thesis Defense (p. 1044)
- Non-Thesis Option (p. 1044)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student

may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research

or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website

<http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1044)
- Continuous Registration (p. 1044)
- Time Limit (p. 1045)
- Foreign Languages (p. 1045)
- Application for Degree (p. 1045)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Communication

The PhD program in Communication is research-intensive and allows students to specialize in one or more of the following areas: (1) Communication, Politics, & Policy, (2) Health Communication, (3) Organizational Communication, (4) Media, Culture, & Identity, and (5) Rhetoric & Public Affairs. Program requirements aim to prepare students who plan careers in academia or other research-oriented professions.

To earn a PhD in the Department of Communication a student must meet the requirements of one of two tracks. The 64-Hour program is available to students entering the program with an MA degree or equivalent. The 96-Hour program is available to students who enter the program without an MA degree or equivalent. In both tracks, students devise an individualized program of study in consultation with her/his adviser. This program of study must allow a student to demonstrate competency in a specialized area of study, as well as gain a comprehensive background in communication studies.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S.

DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1046)
- Degree Plan (p. 1046)
- Transfer of Credit (p. 1047)
- Research Proposal (p. 1047)
- Examinations (p. 1047)
 - Preliminary Examination (p. 1047)
 - Preliminary Examination Format (p. 1047)
 - Preliminary Examination Scheduling (p. 1048)

- Report of Preliminary Examination (p. 1048)
- Retake of Failed Preliminary Examination (p. 1048)
- Final Examination (p. 1049)
- Report of Final Examination (p. 1049)
- Dissertation (p. 1049)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1049)
- Time Limit (p. 1050)
- Continuous Registration (p. 1050)
- Admission to Candidacy (p. 1050)
- Languages (p. 1050)
- 99-Hour Cap on Doctoral Degree (p. 1050)
- Application for Degree (p. 1051)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

International Communication and Public Diplomacy - Certificate

The Bush School of Government and Public Service in conjunction with the Department of Communication offers an International Communication and Public Diplomacy Certificate. The Certificate is designed to help students develop the skills and background to prepare them for careers in government service, business, and other fields that require an understanding of the global communication environment.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------|-----------------------------------------------------------------------------|-----------------------|
| COMM 625 | International Communication and Public Diplomacy | 3 |
| Select one of the following: ¹ | | 3 |
| COMM 658 | Seminar in Communication and Culture ² | |
| COMM 663 | Seminar in Media Studies ² | |
| COMM 685 | Directed Studies ³ | |
| Select two of the following: | | 6 |
| INTA 601 | Leadership in International Affairs: Institutions, Organizations and People | |
| INTA 621 | Chinese Foreign Policy | |
| INTA 645 | Women and Nations | |
| INTA 655 | Nationalism, Immigration and Terrorism in the European Union | |
| INTA 661 | NATO from Military Alliance to Collective Security | |
| INTA 664 | The Middle East State System | |
| INTA 671 | The Political Economy of the Middle East | |
| INTA 672 | East Asian Security | |
| INTA 673 | Chinese Domestic Politics in Transition | |
| INTA 674 | U.S. Foreign Policy in the Persian Gulf | |
| INTA 675 | Religion and Politics in Iran | |
| INTA 676 | International Politics of the Middle East | |
| INTA 686 | Russia and International Politics | |
| Total Semester Credit Hours | | 12 |

¹ A student can take no more than two courses (6 hours) from one department for credit towards the certificate.

² Courses will be assessed for suitability each time offered, due to changing content and different instructors.

³ After completing at least two courses in the certificate program, a student may propose an independent study with an appropriate faculty member in any department who agrees to supervise the student's work for three credit-hours. A student seeking to pursue a directed project needs to submit a proposal, countersigned by the supervising faculty member, describing the project in sufficient detail to permit confirmation that graduate level inquiry will be pursued.

Minimum of 3.0 in each course.

Department of Economics

Head: T. J. Gronberg

PhD Advisor: S. Krasteva

MS Advisor: L. Gan

Graduate study in economics leads to the degrees of Master of Science and Doctor of Philosophy. The graduate program develops theoretical and quantitative skills and analyzes a broad range of contemporary policy issues in order to prepare students for careers in academe, business and government.

Both MS and PhD degrees are offered. It is not necessary to have a master's degree before beginning a doctoral program. To enter the doctoral program in economics, the student should present undergraduate credits in economics, although an undergraduate major in economics is not necessary. Additional preparation should include work in mathematics and statistics. The department has no foreign language requirement for a graduate degree in economics.

Faculty

An, Yonghong, Associate Professor
Economics
PHD, John Hopkins University, 2011

Barr, Andrew C, Assistant Professor
Economics
PHD, University of Virginia, 2015

Bento, Pedro M, Assistant Professor
Economics
PHD, University of Toronto, 2013

Brown, Alexander L, Associate Professor
Economics
PHD, California Institute of Technology, 2008

Castillo, Marco, Professor
Economics
PHD, University of Wisconsin - Madison, 2001

Doleac, Jennifer, Associate Professor
Economics
PHD, Stanford University, 2012

Eckel, Catherine C, Distinguished Professor
Economics
PHD, University of Virginia, 1983

Edwardson, Jeffrey C, Senior Lecturer
Economics
PHD, Texas A&M University, 2000

Fang, Zheng, Assistant Professor
Economics
PHD, University of California, San Diego, 2015

Gan, Li, Professor
Economics
PHD, University of California, Berkeley, 1998

Glass, Amy J, Associate Professor
Economics
PHD, University of Pennsylvania, 1993

Gronberg, Timothy J, Professor
Economics
PHD, Northwestern University, 1978

Guo, Huiyi, Assistant Professor
Economics
PHD, University of Iowa, 2018

Hoekstra, Mark L, Professor
Economics
PHD, University of Florida, 2006

Hwang, Haeshin, Professor
Economics
PHD, University of Minnesota, Twin Cities, 1976

Jansen, Dennis W, Professor
Economics
PHD, University of North Carolina at Chapel Hill, 1983

Krasteva, Silvana S, Associate Professor
Economics
PHD, Duke University, 2009

Lenz, Eric D, Lecturer
Economics
PHD, Southern Illinois University Carbondale, 2015

Li, Qi, Professor
Economics
PHD, Texas A&M University, 1991

Lindo, Jason M, Professor
Economics
PHD, University of California - Davis, 2009

Luco Echeverria, Fernando A, Assistant Professor
Economics
PHD, Northwestern University, 2014

Maness, Robert S, Associate Professor of the Practice
Economics
PHD, Texas A&M University, 1992

McNeil, Lawrence R, Visiting Associate Professor
Economics
PHD, Howard University, 2008

Meer, Jonathan, Professor
Economics
PHD, Stanford University, 2009

Pakhotina, Nataliya V, Lecturer
Economics
PHD, University of Florida, 2010

Petrie, Ragan, Professor
Economics
PHD, University of Wisconsin - Madison, 2002

Puller, Steven L, Professor
Economics
PHD, University of California, Berkeley, 2001

Schulman, Craig T, Associate Professor of the Practice
Economics
PHD, Texas A&M University, 1990

Tian, Guoqiang, Professor
Economics
PHD, University of Minnesota, Twin Cities, 1987

Ureta, Manuelita, Associate Professor
Economics
PHD, UCLA, 1987

Varghese, Adel, Instructional Associate Professor
Economics
PHD, University of Pennsylvania, 1996

Velez, Rodrigo A, Associate Professor
Economics
PHD, University of Rochester, 2009

Wiggins, Steven N, Professor
Economics
PHD, Massachusetts Institute of Technology, 1979

Zhang, Yuzhe, Associate Professor
Economics
PHD, University of Minnesota, 2006

Zubairy, Sarah, Associate Professor
Economics
PHD, Duke University, 2010

Masters

- Master of Science in Economics (p. 1052)

Doctoral

- Doctor of Philosophy in Economics (p. 1057)

Master of Science in Economics

MS in Economics students have the option to adopt a traditional thesis-based Master of Science program, or a non-thesis Master of Science curriculum with a concentration in Financial Economics or Financial Econometrics.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1053)
- Degree Plan (p. 1054)
- Credit Requirements (p. 1054)
- Transfer of Credit (p. 1054)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1054)
- Thesis Option (p. 1055)
 - Thesis Proposal (p. 1055)
 - Final Examination/Thesis Defense (p. 1055)
- Non-Thesis Option (p. 1056)

Student's Advisory Committee

The Master of Science in Economics has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the Thesis track, the student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve.

Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpss.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes

can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree in Economics.

A minimum of 36 semester credit hours of approved courses and research is required for the non-thesis option Master of Science degree in Economics.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be

considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional

Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the non-thesis option Master of Science in Economics.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 6 credit hours of 684 (Professional Internship), 3 credit hours of 685 (Directed Studies; may be taken during the second Spring semester), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree with approval of the advisor. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1056)
- Continuous Registration (p. 1056)
- Time Limit (p. 1056)
- Foreign Languages (p. 1056)
- Application for Degree (p. 1056)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Economics

The PhD Program in Economics emphasizes analytical and quantitative skills and exposes students to a broad range of contemporary policy issues to prepare them for careers in academic, business, or government careers. In their first two semesters of study, students receive rigorous training in three core areas: microeconomics, macroeconomics and econometrics.

After completing the core sequences, students choose three fields of specialization for intensive study. For most students, work on the dissertation begins in the third year and occupies them through the fourth or fifth year of residence.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1058)
- Degree Plan (p. 1058)
- Transfer of Credit (p. 1059)
- Research Proposal (p. 1059)
- Examinations (p. 1059)
 - Preliminary Examination (p. 1059)
 - Preliminary Examination Format (p. 1059)
 - Preliminary Examination Scheduling (p. 1060)
 - Report of Preliminary Examination (p. 1060)
 - Retake of Failed Preliminary Examination (p. 1060)
 - Final Examination (p. 1060)
 - Report of Final Examination (p. 1061)
- Dissertation (p. 1061)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1061)
- Time Limit (p. 1062)
- Continuous Registration (p. 1062)
- Admission to Candidacy (p. 1062)
- Languages (p. 1062)
- 99-Hour Cap on Doctoral Degree (p. 1062)
- Application for Degree (p. 1062)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of English

<https://english.tamu.edu/>

Head: Maura Ives

Graduate Advisor: Sally Robinson

The graduate program in English offers courses leading to the degrees of Master of Arts and Doctor of Philosophy. The department offers training that features a range of methods and approaches to English-language literature and culture while emphasizing skills in written and oral communication, critical investigation and analysis, and mastery of both traditional and emerging areas within the field of English. Graduate work in English prepares students for teaching careers in universities and community colleges, and potentially also for careers in writing, editing and other professional and business fields.

Faculty

Alonzo, Juan J, Associate Professor
English
PHD, University of Texas, 2003

Balester, Valerie M, Professor
English
PHD, The University of Texas - Austin, 1998

Bhattacharya, Nandini, Professor
English
PHD, University of Rochester, 1992

Bistline, Erin N, Lecturer
English
PHD, Texas Tech University, 2017

Blackwell, Catherine S, Lecturer
English
PHD, Texas Tech University, 2012

Carly-Miles, Claire I, Lecturer
English
PHD, Texas A&M University, 2008

Clark, William B, Professor
English
PHD, Louisiana State University and A&M College, 1973

Collins, Michael S, Professor
English
PHD, Columbia University, 1999

Cooper, Rich P, Lecturer
English
PHD, Louisiana State University, 2011

Dicaglio, Joshua M, Assistant Professor
English
PHD, Pennsylvania State University, 2016

Dicaglio, Sara, Assistant Professor
English
PHD, Pennsylvania State University, 2016
MFA, University of Michigan, 2008

Dickson, Donald R, Professor
English
PHD, University of Illinois, Urbana-Champaign, 1981

Dworkin, Ira M, Associate Professor
English
PHD, City University of New York, 2003

Earhart, Amy E, Associate Professor
English
PHD, Texas A&M University, 1999

Egenolf, Susan B, Associate Professor
English
PHD, Texas A&M University, 1995

Eide, Marian, Associate Professor
English
PHD, University of Pennsylvania, 1994

Ezell-Mainzer, Margaret, University Distinguished Professor
English
PHD, Cambridge University, 1981

Francis Jr, James, Lecturer
English
PHD, Middle Tennessee State University, 2010

Fuentes, Ana Marcela, Assistant Professor
English
PHD, Georgia State University, 2016
MFA, Iowa Writers Workshop, 2009

Griffin, Robert J, Associate Professor
English
PHD, Yale University, 1985

Harris, Jason M, Instructional Assistant Professor
English
MFA, Bowling Green State University, 2014
PHD, University of Washington, 2001

Hodgson, Lucia K, Assistant Professor
English
PHD, University of Southern California, 2009

Howell, Jessica M, Associate Professor
English
PHD, University of California, Davis, 2008

Ives, Maura C, Professor
English
PHD, University of Virginia, 1990

Jackson, Shona N, Associate Professor
English
PHD, Stanford University, 2005

Johansen Aase, Emily J, Associate Professor
English
PHD, McMaster University, 2008

Kallendorf, Craig W, Professor
English
PHD, University of North Carolina at Chapel Hill, 1982

Kendall, Shari E, Associate Professor
English
PHD, Georgetown University, 1999

Mandell, Laura C, Professor
English
PHD, Cornell University, 1992

Matthews, Pamela R, Professor
English
PHD, Duke University, 1988

McCoul, Melissa D, Lecturer
English
PHD, University of Notre Dame, 2017

McKinney, Matthew R, Lecturer
English
PHD, University of Nevada- Reno, 2017

McWhirter, David B, Professor
English
PHD, University of Virginia, 1984

Mills, Regina, Assistant Professor
English
PHD, University of Texas, Austin, 2018

Mize, Britt A, Associate Professor
English
PHD, The University of North Carolina at Chapel Hill, 2003

Morey, Anne M, Associate Professor
English
PHD, University of Texas- Austin, 1998

Neighbors, Ryan C, Lecturer
English
PHD, Texas A&M University, 2017
MFA, Hollins University, 2014

Nelson, Claudia B, Professor
English
PHD, Indiana University, 1989

O'Farrell, Mary A, Associate Professor
English
PHD, University of California, Berkeley, 1991

Pantuso, Terri B, Lecturer
English
PHD, University of Texas, San Antonio, 2009

Pattison, Kalani K, Lecturer
English
PHD, Baylor University, 2016

Perry, Nandra L, Associate Professor
English
PHD, University of North Carolina at Chapel Hill, 2003

Peterson, Noah G, Lecturer
English
PHD, Texas A&M University, 2017

Pilsch, Andrew T, Associate Professor
English
PHD, The Pennsylvania State University, 2011

Reddy, Vanita D, Associate Professor
English
PHD, University of California, Davis, 2009

Reynolds, Larry J, University Distinguished Professor
English
PHD, Duke University, 1974

Robinson, Elizabeth K, Instructional Professor
English
PHD, Texas A&M University, 1995

Robinson, Sally A, Associate Professor
English
PHD, University of Washington, 1989

Ross, Shawna M, Assistant Professor
English
PHD, The Pennsylvania State University, 2011

Rowell, Charles H, Professor
English
PHD, Ohio State University, 1972

Rozier, James T, Lecturer
English
PHD, University of Mississippi, 2015

Stabile, Susan M, Associate Professor
English
PHD, University of Delaware, 1997

Todd, Dorothy R, Lecturer
English
PHD, University of Georgia, 2017

Torabi, Katayoun, Instructional Assistant Professor
English
PHD, Texas A&M University, 2018

Tuhkanen, Mikko J, Associate Professor
English
PHD, University at Buffalo, 2005

Vasilakis, Apostolos, Instructional Associate Professor
English
PHD, Emory University, 2004

Warren, Nancy B, Professor
English
PHD, Indiana University, 1997

White, Lowell M, Instructional Assistant Professor
English
PHD, Texas A&M University, 2010

Wilton, David R, Lecturer
English
PHD, University of Toronto, 2016

Wollock, Jennifer G, Professor
English
PHD, Harvard University, 1981

Masters

- Master of Arts in English (p. 1064)

Doctoral

- Doctor of Philosophy in English (p. 1068)

Master of Arts in English

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1065)
- Degree Plan (p. 1065)
- Credit Requirement (p. 1065)
- Transfer of Credit (p. 1065)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1066)
- Thesis Option (p. 1066)
 - Thesis Proposal (p. 1066)
 - Final Examination/Thesis Defense (p. 1067)
- Non-Thesis Option (p. 1067)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit

hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a

student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).

9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1067)
- Continuous Registration (p. 1067)
- Time Limit (p. 1068)
- Foreign Languages (p. 1068)
- Application for Degree (p. 1068)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in English

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1069)
- Degree Plan (p. 1069)
- Transfer of Credit (p. 1070)
- Research Proposal (p. 1070)
- Examinations (p. 1070)
 - Preliminary Examination (p. 1070)
 - Preliminary Examination Format (p. 1070)
 - Preliminary Examination Scheduling (p. 1071)
 - Report of Preliminary Examination (p. 1071)
 - Retake of Failed Preliminary Examination (p. 1071)
 - Final Examination (p. 1071)
 - Report of Final Examination (p. 1072)
- Dissertation (p. 1072)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1072)
- Time Limit (p. 1073)
- Continuous Registration (p. 1073)
- Admission to Candidacy (p. 1073)
- Languages (p. 1073)
- 99-Hour Cap on Doctoral Degree (p. 1073)
- Application for Degree (p. 1074)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

PhD students must demonstrate competency in a minimum of one language. They can do so by

1. completing the Old English/Beowulf sequence of ENGL 610/LING 610;ENGL 610/LING 610;
2. passing a translation examination;
3. earning an A in a graduate reading course; or
4. earning a B or better in 12 hours of undergraduate language coursework completed no more than four years prior to entering the program.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology

- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Hispanic Studies

<http://hisp.tamu.edu>

Head: M. I. Moyna

Graduate Advisor: E. Quintana Millamoto

Graduate work in Hispanic Studies will directly prepare the student for academic careers concerned with Spanish and bilingualism, for teaching positions and for a wide range of government, diplomatic, non-profit and private sector jobs. A high competence in the Spanish language is required.

Faculty

Arizpe, Victor, Professor
Hispanic Studies
PHD, University of Michigan Ann Arbor, 1982

Curry, Richard K, Associate Professor
Hispanic Studies
PHD, Arizona State University, 1982

Espina, Eduardo D, Professor
Hispanic Studies
PHD, Washington University in St. Louis, 1987

Galdo, Juan, Associate Professor
Hispanic Studies
PHD, University of Colorado, 2003

Kallendorf, Hilaire A, Professor
Hispanic Studies
PHD, Princeton University, 2000

Lawo-Sukam, Alain, Associate Professor
Hispanic Studies
PHD, University of Illinois at Urbana - Champaign, 2005

Luiselli, Alessandra, Professor
Hispanic Studies
PHD, University of New Mexico, 1990

Miller, Stephen J, Professor
Hispanic Studies
PHD, The University of Chicago, 1976

Misemer, Sarah M, Professor
Hispanic Studies
PHD, University of Kansas, 2001

Moreiras, Alberto, Professor
Hispanic Studies
PHD, University of Georgia, 1987

Moyna, Maria I, Professor
Hispanic Studies
PHD, University of Florida, 2000

Ortega-Aguilar, Dionisio B, Instructional Assistant Professor
Hispanic Studies
PHD, Stanford University, 1986

Perez Smith, Adriana M, Instructional Assistant Professor
Hispanic Studies
LLM, Southern Methodist University, 2005

Quintana, Maria E, Associate Professor
Hispanic Studies
PHD, University of California, Berkeley, 1998

Vilaros, Teresa M, Professor
Hispanic Studies
PHD, University of Georgia, 1989

Villalobos, Jose P, Associate Professor
Hispanic Studies
PHD, University of California Irvine, 1998

Zapata, Gabriela C, Associate Professor
Hispanic Studies
PHD, The Pennsylvania State University, 2002

Masters

- Master of Arts in Hispanic Studies (p. 1074)

Doctoral

- Doctor of Philosophy in Hispanic Studies (p. 1078)

Master of Arts in Hispanic Studies

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1074)
- Degree Plan (p. 1075)
- Credit Requirement (p. 1075)
- Transfer of Credit (p. 1075)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1075)
- Thesis Option (p. 1076)
 - Thesis Proposal (p. 1076)
 - Final Examination/Thesis Defense (p. 1076)
- Non-Thesis Option (p. 1077)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major

or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies**

prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may

not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1077)
- Continuous Registration (p. 1077)
- Time Limit (p. 1077)
- Foreign Languages (p. 1078)
- Application for Degree (p. 1078)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Hispanic Studies

The PhD in Hispanic Studies is an interdisciplinary program with a set of 3 required core courses and 3 overlapping concentrations: Literature, Linguistics and Culture. Coursework for the program includes 9 hours of core courses, 15 hours of courses prescribed by concentration, up to 15 hours of elective courses in Hispanic Studies, and 6 hours of free elective courses. The program also requires an original dissertation, as well as reading proficiency in a language other than English and Spanish.

Prerequisites: Admission to graduate studies and an undergraduate degree in Spanish or an equivalent competence in Spanish language and literature.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1079)
- Degree Plan (p. 1079)
- Transfer of Credit (p. 1080)
- Research Proposal (p. 1080)
- Examinations (p. 1080)
 - Preliminary Examination (p. 1080)
 - Preliminary Examination Format (p. 1080)
 - Preliminary Examination Scheduling (p. 1081)
 - Report of Preliminary Examination (p. 1081)
 - Retake of Failed Preliminary Examination (p. 1081)
 - Final Examination (p. 1081)
 - Report of Final Examination (p. 1081)
- Dissertation (p. 1082)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1082)
- Time Limit (p. 1083)
- Continuous Registration (p. 1083)
- Admission to Candidacy (p. 1083)
- Languages (p. 1083)
- 99-Hour Cap on Doctoral Degree (p. 1083)
- Application for Degree (p. 1084)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of History

<http://history.tamu.edu>

Head: D. Vaught

Graduate Advisor: Lorien Foote

Graduate study in history leads to the degrees of Master of Arts and Doctor of Philosophy. The mission of our program is to train graduate students to be historians who produce original research, contribute to the scholarly conversation of their chosen field, and are prepared for a career in a variety of professions.

Faculty

Alonzo, Armando C, Associate Professor
History
PHD, Indiana University, 1994

Anderson, Terry H, Professor
History
PHD, Indiana University, 1978

Bach, Damon R, Lecturer
History
PHD, Texas A&M University, 2013

Blanton, Carlos K, Professor
History
PHD, Rice University, 1999

Bouton, Cynthia A, Professor
History
PHD, SUNY Binghamton, 1985

Brooks, Charles E, Associate Professor
History
PHD, University of Buffalo, 1988

Broussard, Albert S, Professor
History
PHD, Duke University, 1977

Cobbs, Elizabeth A, Professor
History
PHD, Stanford University, 1988

Collopy, William F, Lecturer
History
PHD, Texas A&M University, 2011
MLA, University of St. Thomas, 2006

Coopersmith, Jonathan, Professor
History
PHD, University of Oxford, 1985

Dror, Olga, Associate Professor
History
PHD, Cornell University, 2003

Emre, Side, Associate Professor
History
PHD, University of Chicago, 2009

Foote, Lorien L, Professor
History
PHD, University of Oklahoma - Norman, 1999

Haefeli, Evan P, Associate Professor
History
PHD, Princeton University, 2000

Hatfield, April L, Associate Professor
History
PHD, Johns Hopkins University, 1997

Hernandez, Sonia, Associate Professor
History
PHD, University of Houston, 2006

Hinojosa, Felipe, Associate Professor
History
PHD, University of Houston, 2009

Holzweiss, Robert F, Lecturer
History
PHD, Texas A&M University, 2001

Hudson, Angela P, Professor
History
PHD, Yale University, 2007

Hudson, David R, Instructional Associate Professor
History
PHD, Texas A&M University, 1998

Johnson, Violet, Professor
History
PHD, Boston College, 1992

Kamphoefner, Walter D, Professor
History
PHD, University of Missouri, 1978

Kim, Hoi-Eun, Associate Professor
History
PHD, Harvard University, 2006

Kirkendall, Andrew J, Professor
History
PHD, University of North Carolina at Chapel Hill, 1996

Lenihan, John H, Associate Professor
History
PHD, University of Maryland, 1976

Linn, Brian M, Professor
History
PHD, Ohio State University, 1985

MacNamara, Lawrence T, Assistant Professor
History
PHD, Columbia University, 2015

McInnis, Verity G, Senior Lecturer
History
PHD, Texas A&M University, 2012

McNamara, Sarah J, Assistant Professor
History
PHD, University of North Carolina at Chapel Hill, 2016

Parker, Jason C, Professor
History
PHD, University of Florida, 2002

Reese, Roger R, Professor
History
PHD, The University of Texas, 1990

Resch, Robert P, Associate Professor
History
PHD, University of California Davis, 1985

Riegg, Stephen B, Assistant Professor
History
PHD, The University of North Carolina at Chapel Hill, 2016

Rosenheim, James M, Professor
History
PHD, Princeton University, 1981

Rouleau, Brian J, Associate Professor
History
PHD, University of Pennsylvania, 2010

Schloss, Rebecca H, Associate Professor
History
PHD, Duke University, 2003

Schwartz, Daniel L, Associate Professor
History
PHD, Princeton University, 2009

Seipp, Adam R, Professor
History
PHD, University of North Carolina at Chapel Hill, 2005

Smith, Philip M, Instructional Associate Professor
History
PHD, Texas A&M University, 2007

Stranges, Anthony N, Associate Professor
History
PHD, University of Wisconsin - madison, 1977

Unterman, Katherine R, Associate Professor
History
PHD, Yale University, 2011

Vaught, David J, Professor
History
PHD, University of California, Davis, 1997

Weber, Nathaniel R, Lecturer
History
PHD, Texas A&M University, 2016

Wood, Julia E, Assistant Professor
History
PHD, Yale University, 2011

Wright, George C, Professor
History
PHD, Duke University, 1977

Masters

- Master of Arts in History (p. 1085)

Doctoral

- Doctor of Philosophy in History (p. 1089)

Master of Arts in History

Prerequisites: For a major in history at the MA level, the student must present a minimum of 24 semester hours (including 12 advanced hours) of acceptable undergraduate courses in history. A doctoral student will normally be expected to hold the MA degree. For further information concerning the requirements for the MA or PhD, contact the departmental graduate advisor.

Thesis option: The standard MA degree requires a minimum of 30 semester hours, including 24 hours of coursework and 6 hours of HIST 691 for the thesis. Of the 24 hours of coursework, 15 shall be taken in the major area of concentration and 9 in the minor field. The non-thesis MA degree option includes 36 semester hours of coursework.

The Department of History does not admit students who intend to only seek an MA degree – commonly called a ‘terminal’ MA. Students admitted to the 96-hour doctoral program earn the MA as part of their course of study.

MA students must demonstrate a reading knowledge of one foreign language.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1085)
- Degree Plan (p. 1086)
- Credit Requirement (p. 1086)
- Transfer of Credit (p. 1086)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1086)
- Thesis Option (p. 1087)
 - Thesis Proposal (p. 1087)
 - Final Examination/Thesis Defense (p. 1087)
- Non-Thesis Option (p. 1088)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for

the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies**

prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may

not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1088)
- Continuous Registration (p. 1088)
- Time Limit (p. 1088)
- Foreign Languages (p. 1089)
- Application for Degree (p. 1089)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in History

The History graduate program trains graduate students to be historians who produce original research, contribute to the scholarly conversation of their chosen field, and are prepared for a career in a variety of professions.

The PhD requires a minimum of 64 semester hours, including at least 18 semester hours of formal coursework divided into 2 areas of concentration:

| Code | Title | Semester Credit Hours |
|-----------------------------|-------|-----------------------|
| Major area | | 12 |
| Minor area | | 6 |
| Total Semester Credit Hours | | 18 |

Additional required courses are set in consultation with the student's advisor.

Doctoral candidates must normally demonstrate a reading knowledge of two foreign languages, except for doctoral candidates in American History who, with the approval of the student's committee chair, may satisfy the requirement with one foreign language. Students may receive one language credit for each of the following: a) providing an undergraduate transcript indicating the student earned a B or better in two college-level language courses at 200 level or above; b) by passing an Educational Testing Services language examination scoring in the 80th percentile or above; c) on their own responsibility arranging a language exam with an individual member of the faculty in the Department of International Studies or with a faculty member with native fluency in the relevant language in cases where the language is not taught at TAMU d) while at TAMU, enrolling in, and passing, two sequential undergraduate foreign language courses beyond the introductory level, i.e. at 200 level or above; e) passing one of TAMU's foreign language classes specifically designed for graduate students (such as FREN 601 - Introduction to Scientific French). These language courses cannot be listed as a course towards your final credit on your degree plan, but should be listed in the Prerequisites portion of the form.

Doctoral students whose research requires competency in quantitative methods, computer programming, or other specialties may apply to the Director of Graduate studies to substitute two relevant courses in these areas for their second language requirement. Students seeking to make this substitution must make a compelling case to the DGS with the endorsement of their advisor that the courses are necessary for completion of the dissertation.

Students may not take either the final MA or the PhD comprehensive examinations until completing the appropriate language requirement.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of

his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete coursework detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1090)
- Degree Plan (p. 1091)
- Transfer of Credit (p. 1091)
- Research Proposal (p. 1091)
- Examinations (p. 1091)
 - Preliminary Examination (p. 1091)
 - Preliminary Examination Format (p. 1092)
 - Preliminary Examination Scheduling (p. 1092)
 - Report of Preliminary Examination (p. 1092)
 - Retake of Failed Preliminary Examination (p. 1092)
 - Final Examination (p. 1093)
 - Report of Final Examination (p. 1093)
- Dissertation (p. 1093)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by

extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.

- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- All English language proficiency requirements are satisfied.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback

on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of**

Graduate and Professional Studies must be notified in writing of any cancellations.

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1094)
- Time Limit (p. 1094)
- Continuous Registration (p. 1094)
- Admission to Candidacy (p. 1094)
- Languages (p. 1094)

- 99-Hour Cap on Doctoral Degree (p. 1094)
- Application for Degree (p. 1095)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691, 5V98 or 5V99 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 5V98 and 5V99, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology

- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of International Studies

<http://internationalstudies.tamu.edu>

Head: Stefanie Harris

The Department of International Studies offers graduate courses preparing graduate students for the PhD foreign language examinations. These courses (FREN 601 and GERM 603) may not count for hours in a supporting field.

Faculty

Allison, Mary, Instructional Assistant Professor
International Studies
PHD, University of Wisconsin, Madison, 2014

Ayari, Salah, Instructional Associate Professor
International Studies
PHD, University of Minnesota, 1998

Bracher, Nathan J, Professor
International Studies
PHD, University of Texas at Austin, 1984

Brenner, David A, Lecturer
International Studies
PHD, University of Texas, 1993

Carley, Robert F, Assistant Professor
International Studies
PHD, Texas A&M University, 2012

Cecchini, Fabiana, Instructional Associate Professor
International Studies
PHD, University of Pennsylvania, 2007

Cerrato, Maddalena A, Instructional Assistant Professor
International Studies
PHD, Italian Institute for Human Sciences, 2013

Ciccolella, Federica, Professor
International Studies
PHD, Columbia University, 2004

Cooke, Leighton B, Professor
International Studies
PHD, University of California, Berkeley, 1983

Cooke, Olga M, Associate Professor
International Studies
PHD, University of London, 1982

Garritano, Carmela, Associate Professor
International Studies
PHD, Michigan State University, 2001

Golsan, Richard J, University Distinguished Professor
International Studies
PHD, University of North Carolina at Chapel Hill, 1981

Hannaford, Dinah R, Assistant Professor
International Studies
PHD, Emory University, 2014

Harris, Stefanie, Associate Professor
International Studies
PHD, Emory University, 1999

Hawthorne, Melanie C, Professor
International Studies
PHD, University of Michigan Ann Arbor, 1987

Karasipahi, Sena, Instructional Assistant Professor
International Studies
PHD, Universiteit Leiden, 2006

Konrad, Christoph F, Associate Professor
International Studies
PHD, University of North Carolina at Chapel Hill, 1985

Lake, Justin, Associate Professor
International Studies
PHD, Harvard University, 2008

Larson, Ruth E, Associate Professor
International Studies
PHD, Yale University, 1991

Lei, Jun, Assistant Professor
International Studies
PHD, University of California, San Diego, 2015

Marchesini, Manuela, Associate Professor
International Studies
PHD, Stanford University, 2000

Oberhelman, Steven M, Professor
International Studies
PHD, University of Minnesota, 1981

Passmore, Ashley A, Assistant Professor
International Studies
PHD, University of Chicago, 2007

Ragucci, Sylvie B, Senior Lecturer
International Studies
PHD, The Pennsylvania State University, 1999

Rich, Elisabeth, Associate Professor
International Studies
PHD, University of Michigan Ann Arbor, 1985

Rosenthal, Adam R, Assistant Professor
International Studies
PHD, Emory University, 2014

Shandley, Robert R, Professor
International Studies
PHD, University of Minnesota, Twin Cities, 1996

Waugh, Yuki, Instructional Assistant Professor
International Studies
PHD, University of Nebraska, 2006

Department of Performance Studies

<http://perf.tamu.edu>

Head: M. Regan

Graduate Advisor: D. Donkor

Performance studies is an academic discipline that examines relationships between performance and culture. We study traditional art forms such as music, theatre, and dance but also explore a broad range of cultural expression, including rituals, festivals, religious ceremonies, games, parades, storytelling, clothing, folklore, indigenous arts, and the mass media. Those with MA degrees in performance studies may pursue a doctoral degree in the field of performance studies, as well as folklore, theatre, music, dance, communication, and cultural studies. Or, they may teach at the secondary level, work in arts advocacy, for NGOs that specialize in cultural preservation, or in a variety of public humanities positions.

Students in the MA in Performance Studies at Texas A&M University may use performance as research in many of their class projects and for their theses. Many undertake fieldwork or archival research and attend conferences with financial support. All admitted students are offered graduate assistantships for the two years of the program.

Faculty

Ball III, James R, Assistant Professor
Performance Studies
PHD, New York University, 2012

Bustos, Isaac D, Instructional Assistant Professor
Performance Studies
PHD, University of Texas, 2010

Cardoso De Cardoso, Leonardo, Assistant Professor
Performance Studies
PHD, University of Texas at Austin, 2013
MMU, University of Texas at Austin, 2010

Del Ciampo, Matthew J, Lecturer
Performance Studies
PHD, Florida State University, 2016
MMU, Florida State University, 2012

Dexter, Rayna M, Instructional Assistant Professor
Performance Studies
MFA, Kent State University, 2009

Donkor, David A, Associate Professor
Performance Studies
PHD, Northwestern University, 2008

Dox, Donnalee, Professor
Performance Studies
PHD, University of Minnesota, Twin Cities, 1995

Gariazzo, Mariana S, Instructional Assistant Professor
Performance Studies
DOC, University of Texas, 2005

Kattari, Kimberly A, Assistant Professor
Performance Studies
PHD, University of Texas at Austin, 2011
MMU, University of Texas at Austin, 2005

Lieuwen, Peter E, Professor
Performance Studies
PHD, University of California at Santa Barbara, 1984

Morris, Jeffrey M, Associate Professor
Performance Studies
PHD, University of North Texas, 2007

Price, Zachary F, Assistant Professor
Performance Studies
PHD, University of California, Santa Barbara, 2013
MFA, New School University, 2004

Putcha, Rumya S, Assistant Professor
Performance Studies
PHD, University of Chicago, 2011

Regan, Martin P, Associate Professor
Performance Studies
PHD, University of Hawai'i at Manoa, 2006

Spalink, Angenette Marie, Assistant Professor
Performance Studies
PHD, Bowling Green State University, 2014

Wilborn, David F, Associate Professor
Performance Studies
DOC, University of Texas, 1994

Masters

- Master of Arts in Performance Studies (p. 1096)

Master of Arts in Performance Studies

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1097)
- Degree Plan (p. 1097)
- Credit Requirement (p. 1097)
- Transfer of Credit (p. 1097)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1098)
- Thesis Option (p. 1098)
 - Thesis Proposal (p. 1098)
 - Final Examination/Thesis Defense (p. 1099)
- Non-Thesis Option (p. 1099)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit

hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a

student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).

9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1099)
- Continuous Registration (p. 1099)
- Time Limit (p. 1100)
- Foreign Languages (p. 1100)
- Application for Degree (p. 1100)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Philosophy and Humanities

<http://philosophy.tamu.edu>

Head: T. George

PhD Advisor: K. Sweet

MA Advisor: R. Garcia

The Department of Philosophy and Humanities at Texas A&M University offers the degrees of Master of Arts in philosophy and Doctor of Philosophy. Students may pursue studies in any area of philosophy under these programs, both of which have distinctive features. Applicants are asked to specify the degree they wish to pursue.

Faculty

Bermudez Ospina, Jose L, Professor
Philosophy & Humanities
PhD, Cambridge University, 1992

Brady, Emily, Professor
Philosophy & Humanities
PHD, University of Glasgow, 1992

Burch, Robert W, Professor
Philosophy & Humanities
PHD, Rice University, 1969

Conway, Daniel W, Professor
Philosophy & Humanities
PHD, University of California, San Diego, 1985

Curry, Tommy J, Professor
Philosophy & Humanities
PHD, Southern Illinois University, 2009

Daniel, Stephen H, Professor
Philosophy & Humanities
PHD, Saint Louis University, 1977

Drake, Kristin M, Lecturer
Philosophy & Humanities
PHD, Texas A&M University, 2017

Easwaran, Kenneth K, Associate Professor
Philosophy & Humanities
PHD, University of California Berkeley, 2008

Garcia, Robert K, Associate Professor
Philosophy & Humanities
PHD, University of Notre Dame, 2009

George, Theodore D, Associate Professor
Philosophy & Humanities
PHD, Villanova University, 2000

Hand, Michael R, Professor
Philosophy & Humanities
PHD, Florida State University, 1985

Jaima, Amir R, Assistant Professor
Philosophy & Humanities
PHD, SUNY Stony Brook University, 2014

Katz, Claire E, Professor
Philosophy & Humanities
PHD, University of Memphis, 1999

Menzel, Christopher P, Professor
Philosophy & Humanities
PHD, University of Notre Dame, 1984

Miller, Glen A, Instructional Assistant Professor
Philosophy & Humanities
PHD, University of North Texas, 2015

Palmer, Clare A, Professor
Philosophy & Humanities
PHD, University of Oxford, 1993

Pappas, Gregory F, Professor
Philosophy & Humanities
PHD, University of Texas at Austin, 1990

Pettersson, Martin B, Professor
Philosophy & Humanities
PHD, KTH Royal Institute of Technology, 2003

Radzik, Linda C, Professor
Philosophy & Humanities
PHD, The University of Arizona, 1997

Raymond, Dwayne F, Assistant Professor
Philosophy & Humanities
PHD, University of Western Ontario, 2006

Sansom, Roger B, Associate Professor
Philosophy & Humanities
PHD, University of North Carolina at Chapel Hill, 2002

Sweet, Kristi, Associate Professor
Philosophy & Humanities
PHD, Loyola University, Chicago, 2006

Varner, Gary E, Professor
Philosophy & Humanities
PHD, University of Wisconsin - madison, 1988

Wester, Matthew R, Lecturer
Philosophy & Humanities
PHD, Texas A&M University, 2018

Masters

- Master of Arts in Philosophy (p. 1101)

Doctoral

- Doctor of Philosophy in Philosophy (p. 1104)

Master of Arts in Philosophy

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

The MA in Philosophy program is conceived as a terminal program aimed at two purposes. First, to enable professionals and advanced students from other disciplines to complement their training with systematic study of the philosophical concepts most relevant to their specialty. Second, to enable students who may have come to the study of philosophy late in their careers, or who are returning to academic pursuits after pursuing other interests, to continue to enjoy the personal enrichment of philosophy and/or to prepare themselves for doctoral studies at Texas A&M or elsewhere.

Two options for obtaining the MA in Philosophy are available: a non-thesis internship option and a thesis option. Students interested in applying their philosophical skills to other environments, such as education, medicine, law, the military or business, may arrange a professional internship in addition to taking 30 semester hours of coursework (9 of which may be in other disciplines). Individuals who choose to write a master's thesis must take at least 24 semester hours (6 of which may be in other disciplines) in addition to their thesis research. Depending on their background, applicants may be required to take particular undergraduate courses in order to enhance their program of study.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1101)
- Degree Plan (p. 1102)
- Credit Requirement (p. 1102)
- Transfer of Credit (p. 1102)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1102)
- Thesis Option (p. 1103)
 - Thesis Proposal (p. 1103)
 - Final Examination/Thesis Defense (p. 1103)
- Non-Thesis Option (p. 1103)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head. The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the

student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students. No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option, with the exception of the non-thesis option Master of Arts in Philosophy, for which a student may use up to 6 credit hours of 684.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1104)
- Continuous Registration (p. 1104)
- Time Limit (p. 1104)
- Foreign Languages (p. 1104)
- Application for Degree (p. 1104)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a

petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Philosophy

The PhD program in Philosophy is unique in requiring students to engage in truly interdisciplinary academic research. Students may do this either by earning, in addition to the PhD, a master's or higher-level supporting degree in a field other than philosophy, or by completing an interdisciplinary track developed by the Philosophy department in conjunction with several other departments. Approved interdisciplinary tracks are described in the Philosophy department's Graduate Handbook. Supporting degrees may come from any academic field in any college, provided that it supports the student's philosophical research interests. Supporting degrees must be approved by the Department's Graduate Program Advisory Committee. Applicants who already hold a master's or higher-level degree may petition to have it counted as the supporting degree. Such petitions are approved only if the department judges the prior work to fit the overall needs of the student's course of study. Other applicants are expected to choose a track or secure admission to an approved master's program in another department during their second year of study.

The PhD program requires a minimum of 96 semester hours beyond the baccalaureate. Students may apply for admission to doctoral candidacy after completing the track or supporting degree and formal coursework in philosophy amounting to 37 hours. Further information on the requirements for doctoral candidacy may be obtained by contacting the Department of Philosophy and Humanities.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1106)
- Degree Plan (p. 1106)
- Transfer of Credit (p. 1106)
- Research Proposal (p. 1107)
- Examinations (p. 1107)
 - Preliminary Examination (p. 1107)
 - Preliminary Examination Format (p. 1107)
 - Preliminary Examination Scheduling (p. 1107)

- Report of Preliminary Examination (p. 1108)
- Retake of Failed Preliminary Examination (p. 1108)
- Final Examination (p. 1108)
- Report of Final Examination (p. 1108)
- Dissertation (p. 1109)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1109)
- Time Limit (p. 1109)
- Continuous Registration (p. 1109)
- Admission to Candidacy (p. 1109)
- Languages (p. 1110)
- 99-Hour Cap on Doctoral Degree (p. 1110)
- Application for Degree (p. 1110)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Political Science

<http://politicalscience.tamu.edu>

Head: William R. Clark

Graduate Advisor: Matthew Fuhrmann

The Department of Political Science offers graduate study leading to the degrees of the Doctor of Philosophy and Master of Arts. The Doctor of Philosophy degree is appropriate for those who wish to pursue careers as research scholars in institutions of higher education. The Master of Arts curriculum is appropriate as preparation for more advanced work in political science.

Sub-fields in the Department

Students typically choose a Major from among the following sub-fields: American Politics, Comparative Politics, International Relations, Political Theory, Public Policy/Public Administration. Students also choose a Minor from among the previously listed fields, plus Methods or Race, Ethnic, and Gender Politics.

There are several organized research programs within the department that encourage collaboration and dialogue across these sub-fields.

Faculty

Baer, Judith A, Professor Emerita
Political Science
PHD, University of Chicago, 1974

Betz, Timm L, Assistant Professor
Political Science
PHD, University of Michigan, 2015

Bond, Jon R, Professor
Political Science
PHD, University of Illinois at Urbana - Champaign, 1978

Bragg, Belinda L, Lecturer
Political Science
PHD, Texas A&M University, 2006

Cheibub, Jose A, Professor
Political Science
PHD, University of Chicago, 1994

Clark, William, Professor and Head
Political Science
PHD, Rutgers University, 1994

Cook, Scott J, Assistant Professor
Political Science
PHD, University of Pittsburgh, 2014

Crisman-Cox, Casey, Assistant Professor
Political Science
PHD, University of Rochester, 2016

Dyer, Megan K, Lecturer
Political Science
PHD, Texas A&M University, 2017

Edwards III, George C, Distinguished Professor Emeritus
Political Science
PHD, University of Wisconsin - Madison, 1973

Escobar-Lemmon, Maria, Professor
Political Science
PHD, The University of Arizona, 2000

Fortunato, David, Associate Professor
Political Science
PHD, Rice University, 2012

Fuhrmann, Matthew C, Professor
Political Science
PHD, University of Georgia, 2008

Fulton, Sarah A, Associate Professor
Political Science
PHD, University of California, Davis, 2006

Geva, Nehemia, Associate Professor
Political Science
PHD, Ohio State University, 1977

Harmel, Robert, Professor
Political Science
PHD, Northwestern University, 1977

Hollenbach, Florian M, Assistant Professor
Political Science
PHD, Duke University, 2015

Ives, Anthony Lister, Instructional Assistant Professor
Political Science
PHD, University of Texas at Austin, 2018

Jo, Hyeran, Associate Professor
Political Science
PHD, University of Michigan, 2008

Kaya, Ruchan, Visiting Assistant Professor
Political Science
PHD, University of Florida, Gainesville, 2014

Kellstedt, Paul M, Professor
Political Science
PHD, University of Minnesota, Twin Cities, 1996

Koch, Michael T, Associate Professor
Political Science
PHD, University of California, Davis, 2002

Lewis, Dominique H, Lecturer
Political Science
PHD, Michigan State University, 2017

Li, Quan, Professor
Political Science
PHD, Florida State University, 1998

Lim, Phaik S, Senior Lecturer
Political Science
PHD, University of Houston, 2003

Lipsmeyer, Christine S, Associate Professor
Political Science
PHD, Vanderbilt University, 1999

Meier, Kenneth J, Distinguished Professor
Political Science
PHD, Syracuse University, 1975

Nederman, Cary J, Professor
Political Science
PHD, York University, 1983

O'Brien, Diana Z, Associate Professor
Political Science
PHD, Washington University, 2012

Ogden, Benjamin G, Assistant Professor
Political Science
PHD, Boston University, 2016

Pacek, Alexander C, Professor
Political Science
PHD, University of Illinois at Urbana - Champaign, 1991

Perry, Brittany N, Instructional Assistant Professor
Political Science
PHD, Duke University, 2013

Peterson, Erik J, Assistant Professor
Political Science
PHD, Stanford University, 2017

Pond, Amy, Assistant Professor
Political Science
PHD, University of Michigan, 2015

Rainey, Robert C, Associate Professor
Political Science
PHD, Florida State University, 2013

Rice, Mitchell F, Professor
Political Science
PHD, Claremont Graduate School, 1976

Robertson, John D, Professor
Political Science
PHD, University of Illinois at Urbana - Champaign, 1979

Roblyer, Dwight A, Lecturer
Political Science
PHD, Texas A&M University, 2009

Rogers, James R, Associate Professor
Political Science
PHD, The University of Iowa, 1994

Santos, Adolfo, Professor
Political Science
PHD, University of Houston, 1998

Smith, Jason M, Instructional Assistant Professor
Political Science
PHD, Texas A&M University, 2009

Tarar, Ahmer S, Associate Professor
Political Science
PHD, University of Rochester, 2003

Taylor, Michelle M, Professor
Political Science
PHD, Rice University, 1990

Teodoro, Manuel P, Associate Professor
Political Science
PHD, University of Michigan-Ann Arbor, 2007

Tucker, Harvey J, Professor Emeritus
Political Science
PHD, Indiana University, 1977

Ura, Joseph D, Associate Professor
Political Science
PHD, University of North Carolina Chapel Hill, 2006

Von Vacano, Diego A, Associate Professor
Political Science
PHD, Princeton University, 2003

Whitten, Guy D, Professor
Political Science
PHD, University of Rochester, 1994

Wood, Billy D, Professor
Political Science
PHD, University of Houston, 1987

Masters

- Master of Arts in Political Science (p. 1112)

Doctoral

- Doctor of Philosophy in Political Science (p. 1115)

Master of Arts in Political Science

The **Master of Arts (MA)** curriculum is designed to provide broad preparation through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Arts degree.

Requirements for an MA in political science may be satisfied by completing one of two options.

Option I, the thesis plan - requires a minimum of 30 semester hours of credit, no more than 6 of which may be for thesis research POLS 691; a final oral examination is required unless the student has a 3.5 average or better.

Option II, the non-thesis plan - requires at least 36 semester hours of coursework, 24 of which must be in political science plus a minimum of 6 hours in a supporting field; a comprehensive examination is mandatory.

For both degrees, specific program formulation is the responsibility of the student, his or her graduate committee and the graduate advisor. Required methods courses for the PhD and MA in political science include POLS 601 and POLS 602. This sequence presumes familiarity with quantitative research methods in social science. Students without such preparation may be required to take prerequisite work in quantitative methods during their first semester of study in the program.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1112)
- Degree Plan (p. 1113)
- Credit Requirement (p. 1113)
- Transfer of Credit (p. 1113)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1113)
- Thesis Option (p. 1114)
 - Thesis Proposal (p. 1114)
 - Final Examination/Thesis Defense (p. 1114)
- Non-Thesis Option (p. 1115)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair, or one of the co-chairs, of the advisory committee must be from the student's department, and **at least one or more of the members must have an appointment to a department other than the student's major department.**

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree.

Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan and it must include study in more than one area of specialization, but these areas may be contained within the course offerings of a single department. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Arts degree should designate on the official degree plan form the program option desired by checking "thesis option" or "non-thesis option."

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes to the degree plan can be made once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses and research is required for the thesis option Master of Arts degree. A minimum of 36 semester credit hours of approved courses is required for the non-thesis option Master of Arts degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations:

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses, taken in residence at an accredited U.S. institution or approved international institution, with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 6 hours in combination of 691 (Research) or 684 (Professional Internship) may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 684 (Professional Internship) may be used for the degree of Master of Arts non-thesis option with the exception of a student pursuing the Master of Arts in Philosophy, non-thesis option, who may use up to 6 hours of 684 (Professional Internship).
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Arts degree for a student who selects the thesis option program. The finished work is expected to be a competently executed development and exposition of the student's original research topic. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department, a student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

Thesis Proposal

For the thesis option Master of Arts degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For the non-thesis option, a thesis is not required. A final comprehensive examination is required for all non-thesis Master of Arts students.

No examination may be held prior to the mid-point of the semester or summer term in which a student will complete all remaining courses on the degree plan.

A student pursuing the non-thesis option is not allowed to enroll in 691 (Research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Arts degree.

A maximum of 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) and up to 3 credit hours of 695 (Frontiers in Research) may be used toward the non-thesis option Master of Arts degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan.

All requirements for the non-thesis option Master of Arts degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1115)
- Continuous Registration (p. 1115)
- Time Limit (p. 1115)
- Foreign Languages (p. 1115)
- Application for Degree (p. 1115)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Arts, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition must be approved, however, prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Arts program who has completed all coursework on his/her degree plan other than 691 (Research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

For the degree of Master of Arts, a reading knowledge (usually represented by two years of college study) of at least one foreign language is normally required.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Political Science

Students in the PhD program choose a major and minor field from five areas of specialization: American Politics, Comparative Politics, International Relations, Political Theory and Public Administration/Public Policy. Minors in Advanced Research Methodology and Race, Ethnic, and Gender Politics are also available. Students also select a topical field that may be either interdisciplinary in nature or related to their major field of interest. All students are required to complete a common core of methodological courses.

For both degrees, specific program formulation is the responsibility of the student, his or her graduate committee and the graduate advisor. There is a required methods sequence for all students. This sequence presumes familiarity with quantitative research methods in social science. Students without such preparation may be required to take prerequisite work in quantitative methods during their first semester of study in the program.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of

coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | | | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1117)
- Degree Plan (p. 1117)
- Transfer of Credit (p. 1117)
- Research Proposal (p. 1118)
- Examinations (p. 1118)
 - Preliminary Examination (p. 1118)
 - Preliminary Examination Format (p. 1118)
 - Preliminary Examination Scheduling (p. 1118)
 - Report of Preliminary Examination (p. 1119)
 - Retake of Failed Preliminary Examination (p. 1119)
 - Final Examination (p. 1119)
 - Report of Final Examination (p. 1120)
- Dissertation (p. 1120)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1120)
- Time Limit (p. 1120)

- Continuous Registration (p. 1120)
- Admission to Candidacy (p. 1121)
- Languages (p. 1121)
- 99-Hour Cap on Doctoral Degree (p. 1121)
- Application for Degree (p. 1121)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Psychological and Brain Sciences

<http://psychology.tamu.edu>

Head: H. C. Lench

Graduate Advisor: T. Yamauchi

The Department of Psychological and Brain Sciences offers PhD programs in behavioral and cellular neuroscience, clinical psychology, cognition and cognitive neuroscience, industrial/organizational psychology, and social and personality psychology. We have also developed several cross-area interdisciplinary initiatives in diversity science, affective science, and personality processes. The doctoral program in psychology is strongly research oriented; all students are expected to become involved with research beginning in their first year. We offer a Master of Science program in industrial/organizational psychology, which is intended for students who are interested in employment using psychological principles in the workplace and in organizations.

Doctoral Programs

As a department, we seek to be a leader in psychological research and education. Our faculty members are engaged in innovative research programs focused on studying and intervening in behavior through diverse methods and approaches, from micro to macro, with an aim of improving human health and well-being.

The objectives of the PhD program are:

- To prepare students to conduct high quality research, to direct research by others, and to communicate research findings through teaching and writing.
- To prepare students for careers in academic settings or organizations that involve practical solutions to personal, social, or organizational problems.

We enroll approximately 100 graduate students and offer numerous opportunities for student collaboration with faculty. The student-faculty

ratio is roughly 2:1, which allows individualized attention to develop research and professional skills.

All graduate students admitted to the Department of Psychological and Brain Sciences are provided a fellowship or assistantship that pays a competitive monthly salary. Typically this support is available for the entire period of graduate study, four or five years. Office space, computers, funds to travel to professional conventions, and funds to pursue professional development, are also provided.

All of the programs within the Department of Psychological and Brain Sciences support an active speaker series that brings to campus faculty members from other universities each year. This series provides exposure to different perspectives on the field and the opportunity to network with professors at other institutions.

Master's Program

The Department of Psychological and Brain Sciences offers a master's program in Industrial/Organizational Psychology. This is the scientific study of human behavior at work and the application of that science to workplace issues facing individuals, teams, and organizations. Individuals with master's degrees in I/O psychology are employed in consulting, private practice, government, and corporations. The master's program at TAMU emphasizes the application of psychological principles to human resource decisions and organizational behavior challenges. Students benefit from training by faculty who are internationally recognized experts in the workplace and organizations.

Faculty

Alexander-Packard, Gerianne, Professor
Psychological & Brain Sciences
PHD, McGill University, 1991

Anderson, Brian A, Assistant Professor
Psychological & Brain Sciences
PHD, John Hopkins University, 2014

Arthur Jr, Winfred E, Professor
Psychological & Brain Sciences
PHD, The University of Akron, 1988

Atoba, Olabisi, Instructional Assistant Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 2017

Atoba, Olabisi, Instructional Assistant Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 2017

Bergman, Mindy E, Professor
Psychological & Brain Sciences
PHD, University of Illinois at Urbana-Champaign, 2001

Bernard, Jessica A, Assistant Professor
Psychological & Brain Sciences
PHD, University of Michigan, 2012

Bodden, Jack L, Lecturer
Psychological & Brain Sciences
PHD, Ohio State University, 1969

Bolanos, Carlos A, Associate Professor
Psychological & Brain Sciences
PHD, Northeastern University, 2000

Bolger Jr, Patrick A, Instructional Assistant Professor
Psychological & Brain Sciences
PHD, University of Arizona, 2005

Brooker, Rebecca J, Assistant Professor
Psychological & Brain Sciences
PHD, Pennsylvania State University, 2011

Carter Sowell, Adrienne R, Associate Professor
Psychological & Brain Sciences
PHD, Purdue University, 2010

Dawson Mathur, Vani A, Assistant Professor
Psychological & Brain Sciences
PHD, Northwestern University, 2012

Edens, John F, Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 1996

Edens, Pamela S, Lecturer
Psychological & Brain Sciences
PHD, Texas A&M University, 1997

Eitan, Shoshana, Associate Professor
Psychological & Brain Sciences
PHD, Weizmann Institute of Science, 1997

Fields, Sherecce A, Associate Professor
Psychological & Brain Sciences
PHD, University of South Florida, 2008

Grau, James W, Professor
Psychological & Brain Sciences
PHD, University of Pennsylvania, 1985

Heffer Jr, Robert W, Clinical Professor
Psychological & Brain Sciences
PHD, Louisiana State University and A&M College, 1988

Hicks, Joshua A, Associate Professor
Psychological & Brain Sciences
PHD, University of Missouri - Columbia, 2009

Hull, Rachel G, Instructional Associate Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 2003

Lench, Heather C, Professor
Psychological & Brain Sciences
PHD, University of California Irvine, 2007

Leunes, Arnold D, Senior Professor
Psychological & Brain Sciences
PHD, North Texas State College, 1969

MacNamara, Annmarie E, Assistant Professor
Psychological & Brain Sciences
PHD, Stony Brook University, 2013

Madkins, Jeanette P, Lecturer
Psychological & Brain Sciences
PHD, Texas A&M University, 2007

Maren, Stephen A, Distinguished Professor
Psychological & Brain Sciences
PHD, University of Southern California, 1993

Meagher, Mary W, Professor
Psychological & Brain Sciences
PHD, University of North Carolina at Chapel Hill, 1989

Miner, Kathi N, Associate Professor
Psychological & Brain Sciences
PHD, University of Michigan, 2004

Morey, Leslie C, Professor
Psychological & Brain Sciences
PHD, University of Florida, 1981

Moscarello, Justin M, Assistant Professor
Psychological & Brain Sciences
PHD, University of California, Santa Barbara, 2010

Nagaya, Naomi, Research Assistant Professor
Psychological & Brain Sciences
PHD, University of Southern California, 1993

Orr, Joseph M, Assistant Professor
Psychological & Brain Sciences
PHD, University of Michigan, 2011

Packard, Mark G, Professor
Psychological & Brain Sciences
PHD, McGill University, 1991

Payne, Stephanie C, Professor
Psychological & Brain Sciences
PHD, George Mason University, 2000

Rholes, William S, Professor
Psychological & Brain Sciences
PHD, Princeton University, 1978

Sabat, Isaac E, Assistant Professor
Psychological & Brain Sciences
PHD, George Mason University, 2016

Salter, Phia S, Associate Professor
Psychological & Brain Sciences
PHD, University of Kansas, 2010

Schlegel, Rebecca J, Associate Professor
Psychological & Brain Sciences
PHD, University of Missouri - Columbia, 2009

Schmeichel, Brandon J, Professor
Psychological & Brain Sciences
PHD, Florida State University, 2005

Schumacher, Jay S, Lecturer
Psychological & Brain Sciences
PHD, Texas A&M University, 1999

Smallman, Rachel E, Assistant Professor
Psychological & Brain Sciences
PHD, University of Illinois-Urbana Champaign, 2010

Smith, Rachel J, Assistant Professor
Psychological & Brain Sciences
PHD, University of Pennsylvania, 2008

Smith, Steven M, Professor
Psychological & Brain Sciences
PHD, University of Wisconsin - Madison, 1979

Snyder, Douglas K, Professor
Psychological & Brain Sciences
PHD, University of North Carolina at Chapel Hill, 1978

Stagner, Brian H, Clinical Professor
Psychological & Brain Sciences
PHD, University of Massachusetts Amherst, 1982

Vaid, Jyotsna, Professor
Psychological & Brain Sciences
PHD, McGill University, 1982

Vess, Matthew K, Associate Professor
Psychological & Brain Sciences
PHD, University of Missouri, 2010

Wellman, Paul J, Professor
Psychological & Brain Sciences
PHD, Iowa State University, 1980

Worthy, Darrell A, Associate Professor
Psychological & Brain Sciences
PHD, University of Texas, 2010

Yamauchi, Takashi, Associate Professor
Psychological & Brain Sciences
PHD, Columbia University, 1997

Masters

- Master of Science in Psychology (p. 1135)

Doctoral

- Doctor of Philosophy in Clinical Psychology (p. 1123)
- Doctor of Philosophy in Industrial/Organizational Psychology (p. 1129)
- Doctor of Philosophy in Psychology (p. 1139)

Certificates

- Industrial/Organizational Psychology Certificate (p. 1145)

Doctor of Philosophy in Clinical Psychology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired

the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1125)
- Degree Plan (p. 1125)
- Transfer of Credit (p. 1125)
- Research Proposal (p. 1126)
- Examinations (p. 1126)
 - Preliminary Examination (p. 1126)
 - Preliminary Examination Format (p. 1126)
 - Preliminary Examination Scheduling (p. 1126)
 - Report of Preliminary Examination (p. 1127)
 - Retake of Failed Preliminary Examination (p. 1127)
 - Final Examination (p. 1127)
 - Report of Final Examination (p. 1128)
- Dissertation (p. 1128)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination on for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1128)
- Time Limit (p. 1128)

- Continuous Registration (p. 1128)
- Admission to Candidacy (p. 1129)
- Languages (p. 1129)
- 99-Hour Cap on Doctoral Degree (p. 1129)
- Application for Degree (p. 1129)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690, 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Industrial Organizational Psychology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 1131) • Degree Plan (p. 1131) • Transfer of Credit (p. 1131) • Research Proposal (p. 1132) • Examinations (p. 1132) <ul style="list-style-type: none"> • Preliminary Examination (p. 1132) • Preliminary Examination Format (p. 1132) • Preliminary Examination Scheduling (p. 1132) • Report of Preliminary Examination (p. 1133) • Retake of Failed Preliminary Examination (p. 1133) • Final Examination (p. 1133) • Report of Final Examination (p. 1133) • Dissertation (p. 1134) | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1134)
- Time Limit (p. 1134)
- Continuous Registration (p. 1134)
- Admission to Candidacy (p. 1134)
- Languages (p. 1135)
- 99-Hour Cap on Doctoral Degree (p. 1135)
- Application for Degree (p. 1135)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Psychology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1136)
- Degree Plan (p. 1136)
- Credit Requirements (p. 1137)
- Transfer of Credit (p. 1137)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1137)
- Thesis Option (p. 1137)
 - Thesis Proposal (p. 1138)
 - Final Examination/Thesis Defense (p. 1138)
- Non-Thesis Option (p. 1138)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been

made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1139)
- Continuous Registration (p. 1139)
- Time Limit (p. 1139)
- Foreign Languages (p. 1139)
- Application for Degree (p. 1139)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Psychology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h2>Program Requirements</h2> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 1140) • Degree Plan (p. 1141) • Transfer of Credit (p. 1141) • Research Proposal (p. 1141) • Examinations (p. 1142) <ul style="list-style-type: none"> • Preliminary Examination (p. 1142) • Preliminary Examination Format (p. 1142) • Preliminary Examination Scheduling (p. 1142) • Report of Preliminary Examination (p. 1142) • Retake of Failed Preliminary Examination (p. 1143) • Final Examination (p. 1143) • Report of Final Examination (p. 1143) • Dissertation (p. 1143) | | |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <h2>Student's Advisory Committee</h2> <p>After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of no fewer than four members of the graduate faculty representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.</p> | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. | | | |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS | | | |

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1144)
- Time Limit (p. 1144)
- Continuous Registration (p. 1144)
- Admission to Candidacy (p. 1144)
- Languages (p. 1144)
- 99-Hour Cap on Doctoral Degree (p. 1144)
- Application for Degree (p. 1145)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690, 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Industrial/Organizational Psychology - Certificate

The Department of Psychological and Brain Sciences offers a certificate in Industrial/Organizational Psychology.

Program Requirements

| Code | Title | Semester Credit Hours |
|----------|----------------------------------------------------------------------------|-----------------------|
| PSYC 652 | Statistics and Research Methods in Industrial/Organizational Psychology I | 3 |
| PSYC 653 | Statistics and Research Methods in Industrial/Organizational Psychology II | 3 |

Select two of the following:

6

| | |
|----------|-------------------------------------------------------------------------|
| PSYC 654 | Psychometrics and Survey Design in Industrial/Organizational Psychology |
| PSYC 656 | Advanced Selection |
| PSYC 657 | Training and Performance Management |
| PSYC 658 | Work Attitudes and Motivation |
| PSYC 659 | Groups, Teams and Leadership |

Total Semester Credit Hours

12

Department of Sociology

<http://sociology.tamu.edu>

Head: J. Sell

Graduate Advisor: H. Prechel and H. Foster

The Department of Sociology offers graduate study leading to a Doctor of Philosophy. The Doctor of Philosophy degree prepares students for careers of teaching and research in higher education and for careers of research in the private and public sector.

Research and teaching in the department cover all major areas in sociology. The curriculum is constructed especially to support specialized training in the areas of culture; organizational, political and economic sociology; demography, crime, law and deviance; race, class and gender; and social psychology. The department helps students participate actively in these areas of scholarship by providing excellent research facilities and access to data, opportunities to collaborate in faculty research projects, and aid in seeking grants and fellowships to support their own work.

Faculty

Burk, James S, Professor Emeritus
Sociology
PHD, University of Chicago, 1982

Campbell, Mary E, Associate Professor
Sociology
PHD, University of Wisconsin - Madison, 2004

Canizales, Stephanie L., Assistant Professor
Sociology
PHD, University of Southern California, 2018

Cohn, Samuel R, Professor
Sociology
PHD, University of Michigan Ann Arbor, 1981

De Lima Amaral, Ernesto F, Assistant Professor
Sociology
PHD, University of Texas at Austin, 2007

Dietrich, Kathryn A, Instructional Associate Professor
Sociology
PHD, Texas A&M University, 1994

Duran, Robert, Associate Professor
Sociology
PHD, University of Colorado Boulder, 2006

Feagin, Joe R, Distinguished Professor
Sociology
PHD, Harvard University, 1966

Fossett, Mark A, Professor
Sociology
PHD, The University of Texas - Austin, 1983

Foster, Holly A, Professor
Sociology
PHD, University of Toronto, 2001

Gatson, Sarah N, Associate Professor
Sociology
PHD, Northwestern University, 1999

Goldsmith, Patrick A, Associate Professor
Sociology
PHD, University Of Arizona, 1999

Hernandez, Alexander A, Instructional Assistant Professor
Sociology
PHD, Boston College, 2014

Howard, Daniel L, Professor
Sociology
PHD, Vanderbilt University, 1992

Jewell, Joseph O, Associate Professor
Sociology
PHD, UCLA, 1998

Lakkimsetti, Chaitanya, Assistant Professor
Sociology
PHD, University of Wisconsin, 2010

Linneman, Judith A, Instructional Associate Professor
Sociology
PHD, Iowa State University, 1985

Mackin, Robert S, Instructional Associate Professor
Sociology
PHD, University of Wisconsin - madison, 1998

May, Reuben A, Professor
Sociology
PHD, University of Chicago, 1996

McIntosh, William A, Professor
Sociology
PHD, Iowa State University, 1975

Mestrovic, Stjepan G, Professor
Sociology
PHD, Syracuse University, 1982

Moore, Wendy A, Associate Professor
Sociology
PHD, University of Minnesota, 2005

Morris, Theresa M, Professor
Sociology
PHD, Texas A&M University, 2000

Murguia, Edward, Professor Emeritus
Sociology
PHD, University of Texas, 1978

Pals, Heili, Associate Professor
Sociology
PHD, Stanford University, 2006

Plankey Videla, Nancy B, Associate Professor
Sociology
PHD, University of Wisconsin - madison, 1998

Poston Jr, Dudley L, Senior Professor
Sociology
PHD, University of Oregon, 1968

Prechel, Harland N, Professor
Sociology
PHD, University of Kansas, 1986

Sakamoto, Arthur, Professor
Sociology
PHD, University of Wisconsin - Madison, 1988

Sell, Jane A, Professor
Sociology
PHD, Washington State University, 1979

Suzuki, Kazuko, Associate Professor
Sociology
PHD, Princeton University, 2003

Thornton, Patricia H, Professor
Sociology
PHD, Stanford University, 1993

Waren, Warren P, Instructional Assistant Professor
Sociology
PHD, Texas A&M University, 2008

Woods, Timothy S, Instructional Associate Professor
Sociology
PHD, Texas A&M University, 2000

Masters

- Master of Science in Sociology (p. 1146)

Doctoral

- Doctor of Philosophy in Sociolog (p. 1151)y

Master of Science in Sociology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1147)
- Degree Plan (p. 1148)
- Credit Requirements (p. 1148)
- Transfer of Credit (p. 1148)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1148)
- Thesis Option (p. 1149)
 - Thesis Proposal (p. 1149)
 - Final Examination/Thesis Defense (p. 1149)
- Non-Thesis Option (p. 1150)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other

than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1150)
- Continuous Registration (p. 1150)
- Time Limit (p. 1150)
- Foreign Languages (p. 1150)
- Application for Degree (p. 1150)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Sociology

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

The graduate program is designed to facilitate rapid completion of the PhD within five years of full-time study. If students enter the program with a bachelor's degree, they must take 96 hours to complete the PhD. Students entering the graduate program with a masters' degree must take 64 hours. In addition, PhD students must pass a written and oral preliminary examination focusing on their competence in one major area concentration and one minor area concentration in sociology and write a dissertation.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1152)
- Degree Plan (p. 1152)
- Transfer of Credit (p. 1153)
- Research Proposal (p. 1153)
- Examinations (p. 1153)
 - Preliminary Examination (p. 1153)
 - Preliminary Examination Format (p. 1154)
 - Preliminary Examination Scheduling (p. 1154)
 - Report of Preliminary Examination (p. 1154)
 - Retake of Failed Preliminary Examination (p. 1154)
 - Final Examination (p. 1154)
 - Report of Final Examination (p. 1155)
- Dissertation (p. 1155)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student

in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may

be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first

meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible

for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation

are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1155)
- Time Limit (p. 1156)
- Continuous Registration (p. 1156)
- Admission to Candidacy (p. 1156)
- Languages (p. 1156)
- 99-Hour Cap on Doctoral Degree (p. 1156)
- Application for Degree (p. 1156)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with

legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

College of Medicine

<http://medicine.tamhsc.edu>

Administrative Officers

Dean - Carrie Byington, M.D.

For additional information on the college leadership, please visit <https://www.tamhsc.edu/about/leadership/index.html>.

About the College of Medicine

The Texas A&M University Health Science Center College of Medicine (COM) offers degrees in professional and graduate programs. Specifically, students can earn an MD, MD/PhD, MS/PhD, MS in Education for Healthcare Professionals, or a combination MD degree through our MD Plus program. The College of Medicine is committed to excellence in improving the health and well-being of the citizens of Texas and the nation. Our devotion to innovative, diverse, and integrated education is depicted through our distinct programs as well as our passion to produce highly skilled physicians, researchers and educators.

For detailed information about all the programs offered within the College of Medicine, please visit <http://medicine.tamhsc.edu/admissions/index.html>.

Admission Information (p. 38)

Interdepartmental Programs

- Education for Health Care Professionals Certificate (p. 1180)
- Doctor of Medicine and Doctor of Philosophy Combined Degree Program (p. 1174)
- Doctor of Philosophy in Medical Sciences (p. 1166)
- Master of Science in Education for Health Care Professionals (p. 1158)
- Master of Science in Medical Sciences (p. 1162)

First Professional Doctoral

- Doctor of Medicine in Medicine (p. 1172)

Interdepartmental Degree Programs

Graduate education in the College of Medicine is overseen by the Office of Research and Graduate Studies. Our mission is to support and enhance the graduate training activities of the college, and to facilitate achievement of nationally recognized excellence by our faculty, staff, and trainees. Functions of this office include:

- administrative support for the graduate programs
- development of policies and procedures pertaining to college graduate programs
- coordination of interdepartmental and intercollegiate graduate programs
- providing leadership for strategic planning efforts in graduate education
- advising the Dean and the college administration on graduate issues

There are currently two interdepartmental graduate programs residing in the college, Medical Science and Education for Healthcare Professionals (EDHP). The Medical Science program is available at our multiple campuses (Bryan/College Station, Temple, Houston, and Dallas) with distinct research strengths opportunities on each campus; while the Education for Healthcare Professionals program is delivered fully online. Our programs also have a flexible and interdisciplinary curriculum that allows our students to have a highly personalized and individually tailored training program. In addition to our own programs, our faculty also

participate in several interdisciplinary graduate programs, including Genetics, Neuroscience, and Toxicology.

Masters

The purpose of the graduate program in Education for Healthcare Professionals (EDHP) is to provide the training necessary to produce effective leaders in health professions education. Accordingly, the program recruits health professionals who have, or are preparing for, educational leadership positions but who lack formal training in education and/or leadership. This program provides the opportunity for individuals to develop the background and skills necessary to be excellent teachers in their areas of specialty and conduct research to improve and develop innovative educational programs in health professions education. This interdisciplinary Master of Science degree is ideal for individuals who have an interest in an academic career.

For more information about the EDHP program, please visit the following website: <http://medicine.tamhsc.edu/edhp>.

The college also offers a Master of Science in Medical Science, though students are normally admitted into the Ph.D. program in Medical Science and admission for the M.S. degree requires special approval.

Doctoral

Our Medical Science program provides students with formal course work and experimental research leading to a Ph.D. degree. The program is organized into seven emphasis areas called Tracks. Each Track corresponds to an area of scientific research strength in the College where there are sufficient numbers of faculty to provide a robust training experience. Each Track has a specific curriculum that outlines appropriate coursework and activities which will provide the educational foundation for research in that general area. Students are expected to demonstrate professional level knowledge and research skills in their chosen area. The first year curriculum is meant to provide a broad-based foundation for students through course work in medical sciences and through research rotations leading to the selection of a faculty research advisor. Ultimately the student will conduct an independent research project that will constitute a significant contribution to the field in general, should be publishable in a peer-reviewed journal, and forms the basis for the student's dissertation.

The College of Medicine also offers an MD/PhD Combined Degree Program and detailed information on this program can be found at <https://medicine.tamhsc.edu/degrees/md-phd.html>

Masters

- Master of Science in Education for Health Care Professionals (p. 1158)
- Master of Science in Medical Sciences (p. 1162)

Doctoral

- Doctor of Medicine and Doctor of Philosophy Combined Degree Program (p. 1174)
- Doctor of Philosophy in Medical Sciences (p. 1166)

Certificates

- Education for Health Care Professionals Certificate (p. 1180)

First Professional Doctoral

- Doctor of Medicine in Medicine (p. 1172)

Master of Science in Education for Health Care Professionals

The Education for Healthcare Professionals (EDHP) program is designed for individuals to develop the background and skills necessary to be excellent teachers in their areas of specialty and conduct research to improve and develop innovative educational programs in health professions education. The interprofessional Master of Science degree will provide greater access to faculty and students, as well as clinicians and healthcare professionals, who have an interest in academia. Graduates of the program help satisfy the need for qualified teaching faculty in many health professions including nursing, medicine, pharmacy, dental and dental hygiene schools across the country.

The EDHP program has three curriculum options. Students can pursue a distance education 34 credit hour thesis, a distance education 36 credit hour non-thesis, and a distance education 14 credit hour certificate. For certificate information, please visit the Education for Healthcare Professionals - Certificate (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/medicine/interdepartmental/#certificatetext>) section.

The steps below are a general process to complete a masters. A more in depth and program specific guide for thesis and non-thesis students will be available to the students upon entrance into the Education for Healthcare Professionals (EDHP) program.

For more information about our program, please visit the following website; [Medicine.tamhsc.edu/edhp](https://medicine.tamhsc.edu/edhp) (<https://medicine.tamhsc.edu/edhp>).

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Although the Education for Healthcare Professional (EDHP) programs are only offered through distance education, it follows all policies and requirements posted by the University, but please be aware there are program specific guidelines detailed in the student handbook.

Program Requirements

- Student's Advisory Committee (p. 1159)
- Degree Plan (p. 1159)
- Credit Requirements (p. 1159)
- Transfer of Credit (p. 1159)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1160)
- Thesis Option (p. 1160)
 - Thesis Proposal (p. 1161)
 - Final Examination/Thesis Defense (p. 1161)
- Non-Thesis Option (p. 1161)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for

us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option and a minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis (Project) option for the Master of Science degree.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional

Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.

- Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal

deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious bio-hazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement

provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

The Final Examination is not required for the Master of Science in Education for Health Care Professionals.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Although the Education for Healthcare Professional (EDHP) programs are only offered through distance education, it follows all policies and requirements posted by the University, but please be aware there are program specific guidelines detailed in the student handbook.

Additional Requirements

Residence (p. 1161)
Continuous Registration (p. 1161)
Time Limit (p. 1162)
Foreign Languages (p. 1162)
Application for Degree (p. 1162)

Residence

There is no residence requirement for the Master of Science in Education for Health Care Professionals.

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until

all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Medical Sciences

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1163)
- Degree Plan (p. 1163)
- Credit Requirements (p. 1163)
- Transfer of Credit (p. 1163)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1164)
- Thesis Option (p. 1164)
 - Thesis Proposal (p. 1165)
 - Final Examination/Thesis Defense (p. 1165)
- Non-Thesis Option (p. 1165)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).

6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the

Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1165)
- Continuous Registration (p. 1166)
- Time Limit (p. 1166)
- Foreign Languages (p. 1166)
- Application for Degree (p. 1166)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at

Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Medical Sciences

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1167)
- Degree Plan (p. 1168)
- Transfer of Credit (p. 1168)
- Research Proposal (p. 1168)
- Examinations (p. 1168)
 - Preliminary Examination (p. 1168)
 - Preliminary Examination Format (p. 1169)
 - Preliminary Examination Scheduling (p. 1169)
 - Report of Preliminary Examination (p. 1169)
 - Retake of Failed Preliminary Examination (p. 1169)
 - Final Examination (p. 1170)
 - Report of Final Examination (p. 1170)
- Dissertation (p. 1170)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

- Residence (p. 1171)
- Time Limit (p. 1171)

- Continuous Registration (p. 1171)
- Admission to Candidacy (p. 1171)
- Languages (p. 1171)
- 99-Hour Cap on Doctoral Degree (p. 1171)
- Application for Degree (p. 1172)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Medicine

Curriculum

The Doctor of Medicine (MD) degree requires a minimum of four years of study. The focus of the medical curriculum is to prepare students for supervised medical practice through clinical integration of material throughout all four years of study. Students in the pre-clerkship portion of the curriculum (approximately 18 months) do not take separate courses in the traditional basic science disciplines of gross anatomy, biochemistry, genetics, physiology, histology, microbiology, immunology, pharmacology, pathology, and neuroscience. Rather, such content is appropriately organized into integrated blocks of instruction (3 to 19 weeks in duration depending upon the theme of the block). Students in the clerkship portion of the curriculum (approximately 30 months) rotate on clinical service in required clerkships (internal medicine, surgery, psychiatry, pediatrics, obstetrics/gynecology, family medicine, emergency medicine, critical care medicine, and an acting internship) and also have opportunities for rotations in elective clerkships and areas of interest.

Grades are issued for individual blocks and clerkships on an honors/pass/fail basis. Students are required to take and pass and/or achieve a minimum score on National Board of Medical Examiners (NBME) customized comprehensive exams and subject exams at various points in the program.

The ethical and social aspects of medical practice receive special emphasis in the Humanities, Ethics, Altruism and Leadership (HEAL) courses, which provide lecture, discussion and small group case studies that focus on the humanistic concerns in modern medicine.

During the clerkship portion of the curriculum, students receive clinical training in a variety of inpatient and outpatient settings associated with our main clinical teaching campuses located in **Bryan/College Station, Dallas, Houston, Round Rock, Temple** and various sites across the state of Texas. Clerkships in Internal Medicine, Surgery, Family Medicine, Psychiatry, Pediatrics and Obstetrics/Gynecology are required. Also, clerkships in Emergency Medicine, Critical Care Medicine, and acting internship are required. A wide variety of elective clinical experiences are available. Some clinical rotations can be completed at alternate locations around the state (e.g. Pediatrics at Driscoll Children's Hospital in Corpus Christi). Students may also design custom learning experiences for

electives or participate in offerings at other medical colleges on a limited basis.

Policies and Regulations

The College of Medicine (COM) Student Handbook is published on the COM website under the Office of Student Affairs. This handbook is the official statement of rules and regulations that govern student conduct and student activities at the COM. The handbook can be viewed online on the following site; <http://medicine.tamhsc.edu/student-affairs/docs/handbook.pdf>.

Professionalism

Students entering a formal medical education program are expected to uphold and adhere to the ethical and behavioral standards of the profession of medicine. The development and maintenance of a professional attitude is an ongoing responsibility of each student. Evaluation of professional behavior is an integral part of the curriculum and will be a factor in assigning grades and determining promotion, retention or dismissal.

College of Medicine Admission Information (p. 38)

Program Requirements

The Degree of Doctor of Medicine Core Curriculum

The 4-year curriculum provides the basic science and clinical foundations that will prepare medical students for supervised medical practice in residency and beyond.

First Year

| Fall | | Semester Credit Hours |
|----------------------------------|------------------------------|-----------------------------|
| PRE-CLERKSHIP PHASE ¹ | | |
| MEID 605 | Foundations of Medicine I | 5 |
| MEID 606 | Foundations of Medicine II | 3 |
| MEID 607 | Medical Gross Anatomy | 5 |
| MEID 619 | Practice of Medicine I | 8 |
| Semester Credit Hours | | 21 |
| Spring | | |
| MEID 608 | Neuroscience | 5 |
| MEID 609 | Introduction to Disease | 9 |
| MEID 616 | Cardiovascular | 5 |
| MEID 617 | Respiratory | 3 |
| MEID 618 | Medical Student Grand Rounds | 2 |
| MEID 620 | Practice of Medicine II | 8 |
| Semester Credit Hours | | 32 |

Second Year

| Fall | | |
|----------|------------------------------------------------------|---|
| MEID 701 | Hematology/Oncology | 4 |
| MEID 704 | Renal Genitourinary | 4 |
| MEID 706 | Metabolism/Gastrointestinal/Nutrition | 5 |
| MEID 707 | Endocrinology, Reproductive Science, Human Sexuality | 5 |
| MEID 708 | Integument-Musculoskeletal | 2 |

| | | |
|-----------------------|---------------------------------------------------|----|
| MEID 711 | Evidence Based Medicine, Scholarship and Research | 1 |
| MEID 712 | Practice of Medicine III | 6 |
| Semester Credit Hours | | 27 |

Third Year**Fall**

| | | |
|-----------------------------|-------------------------------------|-----|
| CLINICAL PHASE ² | | |
| Clerkship ³ | | |
| EMED 800 | Emergency Medicine Clerkship | 5 |
| IMED 800 | Internal Medicine Clerkship | 10 |
| MEID 685 | Directed Studies | 5 |
| MFCM 800 | Family Medicine Clerkship | 7.5 |
| MPED 800 | Pediatrics Clerkship | 7.5 |
| MPSY 800 | Psychiatry Clerkship | 7.5 |
| MRAD 800 | Radiology Clerkship | 2 |
| OBGY 800 | Obstetrics and Gynecology Clerkship | 7.5 |
| SURG 800 | Surgery Clerkship | 10 |
| Semester Credit Hours | | 62 |

Fourth Year**Fall**

| | | |
|-----------------------------------------------|------------------------------------------------|----|
| Acting Internship (4 weeks) ⁴ | | |
| Select one of the following: | | 5 |
| IMED 896 | Internal Medicine Acting Internship | |
| MEID 998 | Acting Internship - Student Initiated Elective | |
| MFCM 806 | Family Medicine Acting Internship | |
| MPED 829 | Pediatric Acting Internship | |
| OBGY 809 | Obstetrics and Gynecology Acting Internship | |
| SURG 816 | Surgery Acting Internship | |
| Critical Care Medicine (4 weeks) ⁴ | | |
| Select one of the following: | | 5 |
| IMED 831 | Medical Intensive Care Unit | |
| MEID 997 | Critical Care - Student Initiated Elective | |
| MPED 802 | Neonatal Intensive Care Unit | |
| MPED 826 | Pediatric Intensive Care Unit | |
| SURG 839 | Surgical Intensive Care Unit | |
| Semester Credit Hours | | 10 |

Spring

| | | |
|--------------------------------|-------------------------------|------|
| Practice of Medicine (2 weeks) | | |
| MEID 850 | Practice of Medicine Capstone | 2.5 |
| Electives ⁵ | | 39.5 |
| Semester Credit Hours | | 42 |
| Total Semester Credit Hours | | 194 |

¹ **Pre-Clerkship Phase**

The first 18 months of the curriculum (pre-clerkship portion) focus on the fundamentals of biomedical science and consist of two components, Foundations and Organ Systems administered in consecutive blocks.

Foundations blocks emphasize the basic structure of the human body and basic principles of other medical science disciplines, i.e., gross anatomy, histology, basic principles of biochemistry, genetics, pharmacology, and cell physiology. Students take integrated courses which cover medical humanities, ethics, leadership, important professional development topics, and Introduction to Clinical Skills, which includes patient history-taking and doctor-patient communication skills and physical diagnosis.

By mid-April of the first year, students transition into the **Organ Systems** blocks. The Organ Systems blocks cover normal function, pathophysiology and disease-related aspects of the specific organ systems including the basic therapeutic approach to disease. The disciplines covered in Organ Systems blocks include organ-based physiology, organ system/disease-related biochemistry and genetics, pathology, microbiology, immunology, pharmacology, introductory pediatrics and introductory internal medicine. During the Organ Systems blocks, students continue to build skills in integrated humanities and clinical skills.

² **Clinical Phase**

During the **Clinical** portion of the curriculum, students rotate on clinical service in required clerkships and have opportunities for elective rotations in areas of interest. During this time, students have the opportunity to experience clinical training in several different patient care venues and locations, including private-practice, academic, and governmental institutions in Austin, Bryan-College Station, Corpus Christi, Dallas, Houston, Round Rock and Temple.

³ 18 month curriculum: Courses may be taken beginning with the Spring of Year 2 through the end of Spring of Year 3.

⁴ Required rotations/courses. These courses are available all year.

⁵ Electives are offered on all COM campuses. Students may choose from predetermined electives, design custom learning experiences, or participate in offerings at other medical colleges on a limited basis.

- Selective Courses: Within the elective time provided to students, 15 credit hours must follow the specialty specific recommendations. The selective courses were created to help students maximize opportunities and focus training that is complementary to their career goals. Selectives are based on career specialty choice.

- Elective Courses: The Texas A&M College of Medicine electives have been developed to accommodate the diverse educational needs of our students. Students must obtain 24.5 credit hours of electives. The electives provide students the opportunity to further develop their medical knowledge, skills and attitudes. In addition to the electives that have been developed by the college, students may develop student-initiated electives. Student Initiated Electives (SIEs) allow students in good standing great latitude in designing unique elective experiences. All other electives rules/guidelines must also be followed.

Requirements for Graduation for MD Degree

The Doctor of Medicine degree is awarded at the completion of the four-year program to those students who have attained at least a grade of P or S (or higher) in all courses and clerkships in the medical curriculum, who are not on probation, and who have satisfactorily demonstrated to the faculty the personal and professional qualities essential to the practice of medicine. Students are expected to complete requirements for the MD degree within six (6) years, not counting time away on leave of absence or pursuit of advanced degrees, such as an MD/PhD.

- A passing grade in all required courses and clerkships must be achieved in order to receive the Doctor of Medicine (MD) degree.
- The student must obtain at least 194 credit hours to qualify for graduation.
- Passage of USMLE Step 1 and Step 2-CK is required for graduation.
 - Student must pass USMLE Step 1 for promotion to the 4th year.
 - Students must take Step 2-CS prior to graduation. For May graduates, students must take Step 2-CS by May 1. For December graduates, students must take Step 2-CS by December 1.

COM students who qualify for the MD degree and who attain a GPA of 3.50 or above in their professional medical curricula, are awarded a degree “With Honors.” Students who enter the curriculum with advanced standing are not eligible to be named honor graduates.

Commencement for COM students who have earned the MD degree takes place at the end of the spring semester.

Doctor of Medicine and Doctor of Philosophy Combined Degree Program

Doctor of Medicine (MD) and Doctor of Philosophy (PhD) Combined Degree Program

The College of Medicine offers a combined training program leading to both MD and PhD degrees. The purpose of this program is to provide research training for highly motivated medical students planning careers in academic medicine.

To accomplish this, our program integrates the studies and requirements for both the MD and PhD degrees, providing students with many opportunities to relate their study of clinical medicine with basic biomedical science. Such training produces medical scientists with unique insights into human disease processes.

The MD/PhD program typically requires seven to nine years to complete the combined degree requirements. The program is flexible in many ways and is designed to meet the individual educational needs of the student. Students entering the program are enrolled in the summer semester eight weeks prior to medical school orientation. During this semester, students complete six credit hours of graduate research and, in consultation with the Program Director, a self-selected eight week rotation in a research lab. This rotation introduces students to the laboratories and potential research advisors.

Throughout training, all M.D./Ph.D. students are required to participate in MSCI 620/920 (The Scientific Basis of Medicine). This course, which grew out of the M.D./Ph.D. Journal Club, reviews recent papers in the medical literature and utilizes a group setting to further develop critical analysis skills as well as facilitate interaction and dialogue between peers and M.D./Ph.D. trained faculty. In addition, students are encouraged to attend at least one research seminar per week to assist in identifying a major discipline area for graduate training.

Lastly, this program is dedicated to developing outstanding physician-scientists who excel in their field and are competitive at the national level. The curriculum is designed to meet the individual educational needs of

students while promoting excellence. To this end, M.D./Ph.D. students have two options for completing their training:

Option 1

Students follow the medical school curriculum and cover the basic medical sciences during their preclinical training period which extends through December of their second year. Next, students begin their Ph.D. training. During this period, students:

- Complete a second research rotation;
- Select a Ph.D. advisor;
- Finish required coursework, including electives in their specialized discipline area; and
- Finalize a meritorious research project and publish their work as well as write, and defend their dissertation.

After completing the Ph.D. requirements, students finish their clinical clerkships and the fourth year of medical school.

Option 2

Students complete medical school basic sciences courses and clinical clerkships prior to their Ph.D. training. After completing their clinical clerkships students complete a second research rotation and begin their formal Ph.D. training:

- Select a Ph.D. advisor;
- Complete coursework requirements including electives in their specialized discipline area; and
- Finalize a meritorious research project and publish their work as well as write and defend their dissertation.

Following their dissertation defense, students complete their fourth year of medical school. The Ph.D. and M.D. degrees are awarded after the requirements for both degrees have been fulfilled.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student’s college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Complete course work detailed on the approved degree plan. | When: Before preliminary examination. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. . The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: No later than 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduate fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |

and Professional Studies.

| | | |
|----|-------------------------------------|---------------------------------------------------------------------------------------------------|
| 10 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
|----|-------------------------------------|---------------------------------------------------------------------------------------------------|

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

More detailed information on the MD/PhD Combined Degree Program can be found at <https://medicine.tamhsc.edu/degrees/md-phd.html>

Program Requirements

Program Requirements

Student's Advisory Committee (p. 1175)

Degree Plan (p. 1176)

Transfer of Credit (p. 1176)

Research Proposal (p. 1176)

Examinations (p. 1176)

- Preliminary Examination (p. 1176)

- Final Examination/Dissertation Defense (p. 1178)

Dissertation (p. 1179)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department and at least one member must be a member of the MD/PhD Program Steering Committee**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from her/his academic program and located on the respective Texas A&M University campus, to serve as the co-chair of the committee. If the committee chair is on an approved leave of absence, s/he can remain as chair without a co-chair for up to one year with written approval of the Department Head or chair of the intercollegiate faculty. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic

actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation, will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (Research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer

credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examination

Preliminary Examination

The student's major department (or chair of the intercollegiate faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691 and 692 courses). The student is strongly encouraged to complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. The Office of Graduate and Professional Studies must

receive the results of the preliminary examination at least 14 weeks prior to the final examination date. The examination shall be oral and written unless otherwise recommended by the student's advisory committee and approved by the Office of Graduate and Professional Studies. The written part of the examination will cover all fields of study included in the student's degree plan. Each member of the advisory committee is responsible for administering a written examination in his or her particular field, **unless he or she chooses to waive participation in this part of the examination**. Two or more members of the advisory committee may give a joint written examination. One or more members may require a student to take a departmental or intercollegiate faculty examination to supplement or replace a written examination. Each written examination must be completed and reported as satisfactory to the chair of the advisory committee before the oral portion of the examination may be held. In case any written examination is reported unsatisfactory, the entire advisory committee must agree

1. to proceed with the oral portion of the preliminary examination, or
2. to adopt another course of action regarding the unsatisfactory written examination.

Prior to scheduling the preliminary examination with the other committee members, the committee chair will review with the student eligibility criteria, using the Preliminary Examination Checklist to ensure the student is ready for the examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for the semester or summer term during which any portion of the preliminary examination may fall. If the entire examination falls between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan was on file with the Office of Graduate and Professional Studies at least 90 days prior to the first written examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- All English language proficiency requirements have been satisfied.
- All committee members have scheduled or waived the written portion and agreed to attend the oral portion of the examination or have found a substitute. Only one substitution is allowed and it cannot be for the committee chair.
- At the end of the semester in which the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691 and 692). The head of the student's department (or Chair of the Intercollegiate Faculty, if applicable) has the authority to approve a waiver of this criterion.
- The time span from the first written examination to the oral is **no more than three weeks**. (In cases of department-wide written examinations, this criterion is not applicable.) The head of the student's department (or chair of the intercollegiate faculty, if applicable) has the authority to approve a waiver of this criterion.

Once all requirements are met, departments or interdisciplinary degree programs may announce the schedule of the written and oral parts of the examination.

Credit for the preliminary examination is not transferable. If a departmental or intercollegiate faculty examination is used as part of the written portion of the preliminary examination, it must be the **last** examination offered prior to the date scheduled for the preliminary

examination. In the schedule of **the written portion, all members of the student's advisory committee are to be included**.

Through the preliminary examination, the student's advisory committee should satisfy itself that the student has demonstrated the following qualifications:

1. a mastery of the subject matter of all fields in the program;
2. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research.

In case a student is required to take, as a part of the written portion of a preliminary examination, an examination administered by a department or intercollegiate faculty, the department or intercollegiate faculty must:

1. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
2. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
3. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

The chair of the student's advisory committee is responsible for making all written examinations available to the members of the advisory committee at or before the oral portion of the examination. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department or interdisciplinary degree program can have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary program.

The chair of the advisory committee will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies, using the Report of Doctoral Preliminary Examination form and the Preliminary Examination checklist. Both forms must have the appropriate signatures. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required for results for the preliminary examination.

After passing the required preliminary oral and written examinations for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Upon approval of the student's advisory committee, with no more than one member dissenting, and the approval by the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination, when adequate time has been given to permit the student to address the inadequacies emerging from the first examination (normally six months). The student and the advisory committee should jointly negotiate a mutually acceptable date for this purpose.

A student must be registered at Texas A&M University for a minimum of one semester credit hour in the semester or summer term in which they will take any portion of the Preliminary Examination.

Steps for Completing the Preliminary Examination

| Step | Instruction | Details |
|------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline set by the student's college, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 2 | Complete English language proficiency requirements (if applicable), and coursework detailed on degree plan. | When: Before preliminary examination. |
| 3 | Student and chair review eligibility requirements for the preliminary exam using the "Preliminary Examination Checklist". | When: Several weeks before the proposed date of the preliminary examination. Checklist must be signed by chair and department head, or intercollegiate faculty chair. |
| 4 | Student checks the availability of committee members. | When: Several weeks before the proposed date of the preliminary examination. |
| 5 | Students prepares and submits any petitions found necessary for the review of the eligibility requirements. | When: At least three weeks before the proposed date of the preliminary examinations. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 6 | When exam date is determined, the department may announce the schedule. | Approved by: Committee chair, department head or intercollegiate faculty chair. |
| 7 | Chair submits the Report of the Preliminary Examination and the Preliminary Examination Checklist to OGAPS. | When: Within 10 working days of the date of the scheduled oral examination and no later than 14 weeks prior to the final defense date. Approved by: Advisory committee. |

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 8 | Office of Graduate and Professional Studies notifies the student and chair of any actions necessary to rectify any deficiencies. | When: Upon receipt of the report of the doctoral Preliminary Examination. |
|---|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|

Final Examination/Dissertation Defense

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester or summer term. The doctoral student is allowed only one opportunity to take the final examination. No student may be given a final examination unless his or her current official cumulative and degree plan GPAs **are 3.000 or better and he or she has been admitted to candidacy. No unabsolved grades of D, F, or U for any course can be listed on the degree plan.** To absolve a deficient grade, a student must repeat the course and achieve a grade of C or better. A student must have completed all coursework on his or her degree plan with the exception of 691 (Research) or 692 (Professional Study) hours. The student must be registered for all remaining hours; no hours remain to be taken on the degree plan. The preliminary examination results must have been submitted to the Office of Graduate and Professional Studies 14 weeks prior to the date of the defense. The research proposal must have been submitted to the Office of Graduate and Professional Studies 25 working days prior to the date of the final examination/defense. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the approval of the final examination. The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Examinations/Defenses that are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination/defense date will be recorded as failures. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Additionally, all English Language Proficiency requirements must be satisfied prior to scheduling the examination. Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

The advisory committee will submit its recommendations on the appropriate Report of the Final Examination for Doctoral Candidates form to the Office of Graduate and Professional Studies regarding acceptability of the candidate for the doctoral degree. A student must be registered in the University in the semester or summer term in which the final examination is taken.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

Dissertation

MD/PhD students must submit their final corrected and committee approved dissertation to the Office of Graduate and Professional Studies no later than the published deadline during their last semester – after which both the MD and PhD degrees will be conferred.

Additional Requirements

- Residence (p. 1179)
- Time Limit (p. 1179)
- Continuous Registration (p. 1179)
- Admission to Candidacy (p. 1179)
- 99-Hour Cap on Doctoral Degrees (p. 1179)
- Languages (p. 1180)
- Application for Degree (p. 1180)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan.

See Residence Requirements (p. 21).

Time Limit

Students in the combined PhD/MD program must clear their dissertation no later than 2 years after the final examination or within the 10 year time limit whichever occurs first.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (Research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

- completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691,
- a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
- passed the preliminary examination (written and oral portions),
- submitted an approved dissertation proposal,
- met the residence requirements.

The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- Counseling Psychology
- School Psychology

- Veterinary Pathology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

The hour limit for these majors is 130 doctoral hours.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

Application for Degree

The MD and PhD degree are conferred in the same semester.

For information on applying for your degree, please visit the Graduation (p. 26) section.

Education for Health Care Professionals - Certificate

The Certificate in Education for Healthcare Professionals is a 14 credit hour program for students who want to expand their knowledge of teaching and curriculum development. This certificate can be utilized to expand knowledge of teaching and curriculum development. The certificate is also an intermediary step within the EDHP program and can be applied to the Master's degree if the student wishes to pursue the advanced degree in the future.

To review the certificate's overarching goals and student learning outcomes, please review the "Program Requirements" tab.

Program Requirements

Certificate Program Goals and Outcomes

The overarching goals of the Certificate in EDHP are to prepare students to:

- Teach in a variety of settings with an interdisciplinary team. Incorporate theory and practice in the development and implementation of educational offerings in diverse settings and populations.
- Integrate collective teaching strategies and delivery systems for today's new learning environment.
- Effectively evaluate student performance with the necessary tools and strategies in clinical and/or classroom settings.
- Develop their skills as a new faculty member.

The learning outcomes for students who complete the **Certificate in EDHP** require that students will:

- Analyze educational pedagogies for a population of learners.
- Apply best practices of curriculum development and evaluation methods in teaching environments.
- Develop expertise in varied instructional methodologies.
- Incorporate an interdisciplinary perspective into an educator role.
- Integrate the role of educator into current practice.

| Code | Title | Semester Credit Hours |
|-----------------------------|--------------------------------------------------------|-----------------------|
| EDHP 630 | Teaching and Learning Theory | 3 |
| EDHP 631/ NURS 631 | Curriculum Foundations for Health Care Professionals | 3 |
| EDHP 632/ NURS 632 | Assessment and Evaluation for Healthcare Professionals | 3 |
| EDHP 633/ NURS 633 | Teaching Strategies for Health Care Professionals | 3 |
| EDHP 634 | Teaching Practicum | 2 |
| Total Semester Credit Hours | | 14 |

For other specific program requirements regarding the EDHP certificate please review the EDHP website: <http://medicine.tamhsc.edu/edhp>.

College of Nursing

<https://nursing.tamhsc.edu>

Administrative Officers

Dean - Nancy Fahrenwald, Ph.D., R.N., PHNA-BC, FAAN

Associate Dean for Academic Affairs - Debra Matthews, Ph.D., R.N.

Associate Dean for Student Affairs - Kathryn McCallum, M.S.N., R.N.

Associate Dean for Finance and Administration - Shirley Davidson, M.B.A.

Associate Dean for Research - Jane Bolin, Ph.D., J.D., R.N.

Associate Dean for Clinical and Outreach Affairs - Cindy Weston, D.N.P., R.N., CSN-CC, FNP-BC

General Statement

Registered nurses have been called the backbone of our health care system. Working on the front lines of health care, they treat patients, monitor and record their condition, help establish a plan of care, educate patients or the public about a health condition and provide advice and emotional support to patients' family members. Registered nurses are increasingly being recognized as leaders in transforming the health care system to meet the burgeoning demand for prevention, wellness and primary care services with a focus on improving quality and managing costs. In addition to their clinical expertise, nurses are being sought out to serve in a variety of leadership posts on bodies developing policy recommendations related to a wide-range of health care policy issues.

Individuals who earn a nursing degree must first complete a national licensing examination in order to obtain a nursing license for practice. Further training or education can qualify nurses to work in specialty areas, such as emergency care, pediatrics, labor and delivery, mental health, oncology, surgery, school or public health. Graduate education can increase advancement opportunities for nurses including administrative

positions in health care, academic faculty positions, and health care delivery as advanced practice nurses.

The College of Nursing is committed to addressing the critical nursing shortage across Texas through exceptional graduate and undergraduate educational programs and advanced technologies in nursing. Students are educated through cutting-edge technologies and simulated experiences, which include standardized patients and virtual learning activities. As leaders, our graduates are taught to question traditional methods and continually seek the best practices based on relevant clinical research. Through community service and leadership opportunities, the College of Nursing fosters a sense of social responsibility and global citizenship.

History

Texas A&M College of Nursing received approval from the Texas Board of Nursing on July 17, 2008, and admitted its first class on July 21, 2008. The college has grown to approximately 450 nursing students enrolled at two campuses: Bryan and Round Rock as well as having many students in distance education programs. The college also has a resident recruiting presence in Lufkin and McAllen serving residents in East and South Texas, for both undergraduate and graduate nursing students.

Texas A&M College of Nursing graduates are among the best-prepared masters and baccalaureate nurses in the nation, and they are highly sought after by prospective employers. First-time passing rates on certification board exams for graduates of the FNP degree program are significantly above the national average. Additionally, the first-time National Council Licensure Examination for Registered Nurses® (NCLEX-RN) pass rates for BSN graduates have ranked 10 percentage points higher than both the Texas and national average for the past ten years. The percent of graduates employed within the first month following graduation is consistently high compared to national averages.

In recognition of this standard of excellence, the college received the National League of Nursing's prestigious designation as a Center of Excellence in Nursing Education for the years 2016-2020 which recognizes schools of nursing that have achieved a level of distinction by outstanding innovations, commitment, and sustainability of excellence.

The Degrees of Master of Science in Nursing

The College of Nursing offers three Master of Science in nursing (MSN) degrees. The MSN degree programs are offered primarily online, with some required visits to the Bryan-College Station campus, based on the program.

Completion of the MSN Nursing Education degree enables graduates to instruct future generations of the nursing profession with advanced teaching emphasis, preparing them for the national certification exam in nursing education.

Graduates of the MSN Family Nurse Practitioner (FNP) program are advanced practice registered nurses who provide primary health care to a wide range of patients from infants and children to older adults. MSN-FNP graduates are eligible to take the ANCC and AANP certification exams. With a focus on health promotion, risk reduction, disease prevention and illness management, FNP's help meet the escalating need for high-quality and accessible health care.

The MSN in Forensic Nursing prepares graduates to care for victims and perpetrators of traumatic events or criminal acts. While caring for

patients, the forensic nurse is responsible for observing, recognizing, collecting and documenting forensic evidence.

Accreditation by the Commission on Collegiate Nursing Education (CCNE)

The Commission on Collegiate Nursing Education is an autonomous accrediting agency, contributing to the improvement of the public's health. A specialized/ professional accrediting agency, CCNE ensures the quality and integrity of baccalaureate and graduate nursing programs and of post-baccalaureate nurse residency programs. The baccalaureate and master's degree programs in nursing at Texas A&M University College of Nursing are accredited by the Commission on Collegiate Nursing Education (<http://www.ccneaccreditation.org>), 655 K Street, NW, Suite 750, Washington, DC 20001, 202-887-6791.

Locations

The Bryan/College Station campus serves as the headquarters of the Texas A&M Health Science Center College of Nursing. The 200-acre campus is located along State Highway 47 approximately three miles west of the main campus of Texas A&M University. The College of Nursing campus in Round Rock, Texas provides a state-of-the-art 134,000 -square-foot structure with classrooms, a simulation center, library, study lounge, student services and faculty offices. Additionally, the College of Nursing has two advising locations: Lufkin and McAllen, Texas.

Bryan/College Station Campus
8447 State Highway 47
Bryan, TX 77807-3260
(979) 436-0110
nursing.tamhsc.edu (<http://nursing.tamhsc.edu>)

Round Rock Campus
3950 North A. W. Grimes Blvd.
Round Rock, TX 78665
(512) 341-4200

McAllen Advising Location
2101 South McColl Road
McAllen, TX 78503
(956) 668-6328

Lufkin Advising Location
Angelina College, Health Careers Building
3500 South 1st Street, Room #H110
Lufkin, TX 75904
936-633-3293

Masters

- Master of Science in Nursing in Family Nurse Practitioner (p. 1182)
- Master of Science in Nursing in Forensic Nursing (p. 1186)
- Master of Science in Nursing in Nursing Education (p. 1190)

Certificates

- Certificate in Forensic Healthcare (p. 1194)

Master of Science in Nursing in Family Nurse Practitioner

For requirements specific to the **Master of Science in Nursing (MSN)** - Family Nurse Practitioner Program is offered primarily online with some required visits to the Bryan-College Station campus. Please reference the Program Requirements tab and more information provided at this link (<https://nursing.tamhsc.edu/msn-fnp>). More information will be provided at orientation. Note the college does not offer a thesis option at this time.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 1 | The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . | |
| 2 | Complete the application for degree form via the student's Howdy portal. | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1182)
- Degree Plan (p. 1183)
- Credit Requirements (p. 1183)
- Transfer of Credit (p. 1183)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1184)
- Thesis Option (p. 1184)
 - Thesis Proposal (p. 1184)
 - Final Examination/Thesis Defense (p. 1185)
- Non-Thesis Option (p. 1185)

Student's Advisory Committee

The Master of Science in Nursing in Family Nurse Practitioner has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate

faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed**

and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science in Nursing degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 51 semester credit hours of approved courses and research is required for the thesis option Master of Science in Nursing degree.

A minimum of 48 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.
2. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
5. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
6. A maximum of 2 hours of Seminar (681).
7. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
8. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.
11. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
12. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science in Nursing degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science in Nursing degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety (<http://rcb.tamu.edu>) website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

A final comprehensive examination is not required for the MSN with a major in Family Nurse Practitioner non-thesis option.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1185)
- Continuous Registration (p. 1185)
- Time Limit (p. 1185)
- Foreign Languages (p. 1186)
- Application for Degree (p. 1186)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Continuous Registration

A student in the thesis option of the Master of Science in Nursing program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time

limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science in Nursing degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Nursing in Forensic Nursing

For requirements specific to the **Master of Science in Nursing (MSN)** - Forensic Nursing Program is offered primarily online with some required visits to the Bryan-College Station campus. Please reference the Program Requirements tab and more information provided at this link (<https://nursing.tamhsc.edu/msn-fors>). More information will be provided at orientation. Note the college does not offer a thesis option at this time.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1187)
- Degree Plan (p. 1187)
- Credit Requirements (p. 1187)
- Transfer of Credit (p. 1187)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1188)
- Thesis Option (p. 1188)

- Thesis Proposal (p. 1188)
- Final Examination/Thesis Defense (p. 1189)
- Non-Thesis Option (p. 1189)

Student's Advisory Committee

The Master of Science in Nursing in Forensic Nursing has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are

responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science in Nursing degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 39 semester credit hours of approved courses and research is required for the thesis option Master of Science in Forensic Nursing degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit

hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.

10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science in Nursing degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science in Nursing degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety (<http://rcb.tamu.edu>) website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

A final comprehensive examination is not required for the MSN with a major in Forensic Nursing non-thesis option.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1189)
- Continuous Registration (p. 1189)
- Time Limit (p. 1189)
- Foreign Languages (p. 1190)
- Application for Degree (p. 1190)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Continuous Registration

A student in the thesis option of the Master of Science in Nursing program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven

calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science in Nursing degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Nursing in Nursing Education

For requirements specific to the **Master of Science in Nursing (MSN)** - Nursing Education Program is offered primarily online with some required visits to the Bryan-College campus. Please reference the Program Requirements tab and more information provided at this link (<https://nursing.tamhsc.edu/msn>). More information will be provided at orientation. Note the college does not offer a thesis option at this time.

Steps to Fulfill Master's Degree Requirements

| | | | |
|----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | |
| 3 | | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1191)
- Degree Plan (p. 1191)
- Credit Requirements (p. 1191)
- Transfer of Credit (p. 1191)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1192)
- Thesis Option (p. 1192)
 - Thesis Proposal (p. 1193)
 - Final Examination/Thesis Defense (p. 1193)
- Non-Thesis Option (p. 1193)

Student's Advisory Committee

The Master of Science in Nursing in Nursing Education has a non-thesis track. After receiving admission to graduate studies, selecting the non-thesis track, and enrolling for coursework, the student will be assigned a committee chair.

For the thesis track, after receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the

role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science in Nursing degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 39 semester credit hours of approved courses and research is required for the thesis option MSN in Nursing Education.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess

of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.

- Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science in Nursing degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty,

if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science in Nursing degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety (<http://rcb.tamu.edu>) website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or

interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

A final comprehensive examination is not required for the MSN with a major in Nursing Education non-thesis option.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science in Nursing degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science in Nursing degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science in Nursing degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1193)
- Continuous Registration (p. 1193)
- Time Limit (p. 1194)
- Foreign Languages (p. 1194)
- Application for Degree (p. 1194)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses

See Residence Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>).

Continuous Registration

A student in the thesis option of the Master of Science in Nursing program who has completed all coursework on his/her degree plan other

than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science in Nursing degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Forensic Healthcare - Certificate

The College of Nursing offers a Forensic Healthcare Graduate Certificate program. The Forensic Health Care Certificate is open to licensed Registered Nurses, holding a bachelor's degree in Nursing, who wish to assist victims of violence and trauma.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------|-------------------------------------------------------------|-----------------------|
| FORS 601/ NURS 601 | Foundations of Forensic Healthcare | 2 |
| FORS 602/ NURS 602 | Victimology: Clinical Implications and Applications | 3 |
| FORS 603/ NURS 603 | Impact of Violence Across the Lifespan | 3 |
| Select 4 hours from the following: | | 4 |
| FORS 604/ NURS 604 | Forensic Investigation of Injury | |
| FORS 610/ NURS 610 | Forensic Sexual Assault Examiner | |
| FORS 611/ NURS 611 | Application of Clinical Pharmacology to Victims of Violence | |
| FORS 612/ NURS 612 | Human Trafficking | |
| FORS 613/ NURS 613 | Forensic Photography | |

| | |
|-------------------------------------------------------------------|----|
| FORS 614/ Policy and Ethics of Interpersonal NURS 614 Violence | |
| FORS 615/ Forensic Mental Health NURS 615 | |
| Total Semester Credit Hours | 12 |

Irma Lerma Rangel College of Pharmacy

Administrative Officers

- Founding Dean - Indra K. Reddy, Ph.D.
- Vice Dean for the College Station Campus - Mansoor A. Khan, R.Ph., Ph.D.
- Associate Dean for Academic Affairs - Steven L. Peterson, Ph.D.
- Associate Dean for Clinical and Professional Affairs - Asim Abu-Baker, Pharm.D.
- Assistant Dean for Finance and Administration - Ramey A. Benfield, M.B.A., M.S.
- Assistant Dean for Student Affairs - Amanda M. Galindo, Ed.D.

About the College of Pharmacy

The Irma Lerma Rangel College of Pharmacy offers a Doctor of Pharmacy (Pharm.D.) degree program. The primary goal of the program is to provide a comprehensive pharmacy education in a stimulating environment to prepare students for the practice of pharmacy as competent, caring, ethical professionals dedicated to the provision of optimal pharmaceutical care.

Students enrolled in this program are exposed to a core professional curriculum that includes coursework in the biomedical sciences; pharmaceutical sciences; social, behavioral and administrative pharmacy sciences; and pharmacy practice. The curriculum consists of 146 semester credit hours (SCH) and is organized so that students progress from didactic and laboratory coursework in pharmaceutical and clinical sciences to summative experiential rotations. This total includes 101 SCH of the core curriculum (required courses), six SCH of elective courses, 38 SCH of experiential education (hands-on clinical experiences) and one SCH of capstone. The fourth year focuses on Advanced Pharmacy Practice Experiences where students apply and further develop the knowledge and skills gained during the first three years of the program.

Only those students who are admitted into the Irma Lerma Rangel College of Pharmacy may enroll in courses. All pre-pharmacy coursework must be completed prior to the beginning of the first professional year (P1). Advancement to subsequent professional years (P2, P3 and P4) is determined by successful completion of all designated prerequisites and all prescribed coursework for that year. Students with unsatisfactory academic performance may not progress to the next year, may be required to remediate deficiencies, or repeat the year in which the deficiencies occurred.

Courses that comprise the core curriculum include both required and elective coursework and are described below.

Curricular Changes

The Irma Lerma Rangel College of Pharmacy program is subject to ongoing evaluation as mandated by the Accreditation Council for Pharmacy Education (ACPE). The Accreditation/Self-Study Committee follows the Guidelines for Self-Study from ACPE. It should be noted that these guidelines call for ongoing assessment rather than point-in-time assessment of program elements. This committee reports to the dean, who is responsible for taking action on the findings and recommendations of the committee. Proposals for curricular modification emanating from these self-study processes are carefully deliberated by the entire faculty. While the curriculum and program of study detailed within this document were accurate at the time of publication, the college reserves the right to make modifications without advance notice.

Course Credits

The learning format of the class governs the number of Semester Credit Hours (SCH) a particular course is given. The following guidelines were used to make these determinations:

- Didactic Courses: 1 x 50 minutes = 1 Semester Credit Hour
- Seminar Courses: 2 x 50 minutes = 1 Semester Credit Hour
- Laboratory Courses: 3-4 x 50 minutes = 1 Semester Credit Hour
- Recitation Courses: 3-4 x 50 minutes = 1 Semester Credit Hour (e.g., case studies)
- Experiential Courses: 8¹ x 50 minutes = 1 Semester Credit Hour

¹ For experiential courses, semester credit hours assigned are described in the course syllabus and typically 8 or more 50 minute sessions equals 1 semester credit hour.

Admission Information (p. 40)

First Professional Doctoral

- Doctor of Pharmacy in Pharmacy (p. 1195)

Interdepartmental Degree Programs

- Doctor of Pharmacy in Pharmacy (p. 1195)

Doctor of Pharmacy

The **Doctor of Pharmacy (Pharm.D.)** degree program aims to increase representation in the pharmacy profession by the traditionally underrepresented demographic groups of South Texas, provide the population of South Texas access to a high quality Pharm.D. program, support advanced research in pharmaceutical care issues pertinent to South Texas, enhance health outcomes, and expand the scope and depth of regional health care service activities.

Educational Objectives

The Irma Lerma Rangel College of Pharmacy prepares entry-level pharmacy practitioners with the essential abilities necessary to be competent professionals, as evidenced by the ability to pass the North American Pharmacy Licensure Examination (NAPLEX) and Multistate Pharmacy Jurisprudence Examination (MPJE) on the first attempt.

The required core competencies to be attained by Pharm.D. students are grouped into the following categories:

- Communicating with patients and health professionals
- Applying basic science to practice
- Problem-solving and decision-making
- Dispensing pharmaceuticals
- Providing pharmaceutical care
- Performing professionally and ethically
- Managing and supervising within pharmacy practice

Each of the above categories has specific learning objectives that each student is expected to satisfy over his or her course of study.

Program Requirements

Courses that comprise the core curriculum of the Irma Lerma Rangel College of Pharmacy curriculum leading to the Doctor of Pharmacy degree are described below. The core includes both required and elective coursework. The courses below are listed by year and consist of didactic, laboratory, practice experience (introductory and advanced) and post-experiential offerings. Each course is shown with designations of pre-and/or corequisites where applicable.

First Year

| Fall | | Semester Credit Hours |
|-----------------------|---------------------------------------------------------|-----------------------|
| PHAR 626 | Human Physiology | 4 |
| PHAR 627 | Biochemistry | 3 |
| PHAR 641 | Pharmaceutical Calculations | 2 |
| PHAR 610 | Principles Drug Action I | 2 |
| PHAR 656 | Health Care Systems | 2 |
| PHAR 672 | Introduction to Patient Care | 2 |
| PHAR 671 | Clinical Communications | 2 |
| PHAR 605 | IPPE I: Introductory Pharmacy Practice Experiences | 1 |
| PHAR 601 | Forum / Student Portfolios / Professional Development I | 0 |
| Semester Credit Hours | | 18 |

Spring

| | | |
|-----------------------|---------------------------------------------------------|----|
| PHAR 673 | Self Care and Non-Prescription Medications | 3 |
| PHAR 611 | Principles Drug Action II | 2 |
| PHAR 628 | Research Methods/Biostatistics | 2 |
| PHAR 658 | Public Health and Pharmacoepidemiology | 2 |
| PHAR 642 | Pharmaceutics I | 4 |
| PHAR 657 | Pharmacy Law and Ethics | 3 |
| PHAR 606 | IPPE II: Introductory Pharmacy Practice Experiences | 1 |
| PHAR 601 | Forum / Student Portfolios / Professional Development I | 1 |
| Semester Credit Hours | | 18 |

Second Year

| Fall | | |
|----------|-----------------------------------------------------|---|
| PHAR 742 | Basic Pharmacokinetics | 3 |
| PHAR 741 | Pharmaceutics II | 3 |
| PHAR 710 | IPT I: Electrolytes, Acid-Base, and Kidney Diseases | 2 |
| PHAR 711 | IPT II: Cardiovascular Diseases | 4 |

| | | |
|-----------------------|-------------------------------------------------------------|----|
| PHAR 721 | Nutrition, Vitamins, Complementary and Alternative Medicine | 2 |
| PHAR 777 | Sterile Products/IV Admixtures (Lab) | 1 |
| PHAR 705 | IPPE: Community Pharmacy Practice | 1 |
| PHAR 714 | IPT Recitation/Rounds I | 1 |
| PHAR 701 | Forum/Student Portfolios/Professional Development II | 0 |
| Semester Credit Hours | | 17 |

Spring

| | | |
|-----------------------|-------------------------------------------------------|----|
| PHAR 726 | Microbiology/Immunology | 3 |
| PHAR 757 | Pharmacy Management and Pharmacoeconomics | 3 |
| PHAR 712 | IPT III: Endocrinology and Metabolic Diseases | 3 |
| PHAR 713 | IPT IV: Neurology and Pain Management | 3 |
| PHAR 778 | Drug Literature Evaluation and Patient Drug Education | 3 |
| PHAR 706 | IPPE: Institutional Pharmacy Practice | 1 |
| PHAR 715 | IPT Recitation/Rounds II | 1 |
| PHAR 701 | Forum/Student Portfolios/Professional Development II | 1 |
| Elective | | 0 |
| Semester Credit Hours | | 18 |

Third Year**Fall**

| | | |
|-----------------------|--------------------------------------------------------------------------------|----|
| PHAR 841 | Toxicology and Poison Management | 2 |
| PHAR 872 | Social-Behavioral Aspects of Patient Care | 2 |
| PHAR 810 | IPT V: Psychiatry and Addiction | 3 |
| PHAR 811 | IPT VI: Critical Care, GI, Pulmonary, Rheumatic, Ophthalmology and Dermatology | 5 |
| PHAR 814 | IPT Recitation/Rounds III | 1 |
| PHAR 801 | Forum/Student Portfolios/Professional Development III | 0 |
| PHAR 842 | Patient Assessment | 3 |
| Elective | | 3 |
| Semester Credit Hours | | 19 |

Spring

| | | |
|-----------------------|-----------------------------------------------------------|----|
| PHAR 873 | Pharmacy Professionalism | 1 |
| PHAR 875 | Clinical Pharmacokinetics | 3 |
| PHAR 871 | Pharmaceutical Care Lab and Medication Therapy Management | 2 |
| PHAR 812 | IPT VII: Infectious Diseases | 5 |
| PHAR 813 | IPT VIII: Oncology, Transplant and Genomics | 3 |
| PHAR 801 | Forum/Student Portfolios/Professional Development III | 1 |
| PHAR 815 | IPT RECITATION/ROUNDS IV | 1 |
| Elective | | 3 |
| Semester Credit Hours | | 19 |

Fourth Year**Fall**

| | | |
|------------------|--|---|
| PHAR 8XX APPE I | | 6 |
| PHAR 8XX APPE II | | 6 |

| | | |
|-----------------------------|----------|-----|
| PHAR 8XX APPE III | | 6 |
| PHAR 8XX APPE IV | | 6 |
| Semester Credit Hours | | 24 |
| Spring | | |
| PHAR 8XX APPE V | | 6 |
| PHAR 8XX APPE VI | | 6 |
| PHAR 805 | Capstone | 1 |
| Semester Credit Hours | | 13 |
| Total Semester Credit Hours | | 146 |

Course Credits

The learning format of the class governs the number of Semester Credit Hours (SCH) a particular course is given. The following guidelines were used to make these determinations:

- Didactic Courses: 1 x 50 minutes = 1 Semester Credit Hour
- Seminar Courses: 2 x 50 minutes = 1 Semester Credit Hour
- Laboratory Courses: 3-4 x 50 minutes = 1 Semester Credit Hour
- Recitation Courses: 3-4 x 50 minutes = 1 Semester Credit Hour (e.g., case studies)
- Experiential Courses: 8¹ x 50 minutes = 1 Semester Credit Hour

¹ For experiential courses, semester credit hours assigned are described in the course syllabus and typically 8 or more 50 minute sessions equals 1 semester credit hour.

Requirements for Graduation

A candidate for the Doctor of Pharmacy (Pharm. D.) degree must meet all of the following requirements to be eligible to graduate:

- Satisfactorily meeting all requirements for admission
- Satisfactorily complete all curriculum requirements including:
 - the total number of semester credit hours
 - all specified didactic and experiential coursework
 - passing all applicable comprehensive benchmark assessment activities
 - completion of all final administrative or other requirements (e.g., final debts to the college or Texas A&M University)
- Satisfactorily complete all Student Portfolio assignments
- Have a cumulative grade point average of 2.3 or higher for the total degree program requirements
- Complete all immunization certification requirements
- Complete an exit interview with the Texas A&M University Scholarships & Financial Aid and the college's Office of Student Affairs
- Submit a graduation application by the due date to the Texas A&M University Office of the Registrar
- Pay any required graduation fees or outstanding debts to the Texas A&M University Student Business Services

A student failing to meet any of these requirements may not graduate until ALL requirements are met.

School of Public Health

<http://sph.tamhsc.edu>

Administrative Officers

- Interim Dean - John R. August
- Associate Dean for Climate and Diversity – Lisako McKyer, Ph.D, M.P.H.
- Associate Dean for Public Health Practice - Jennifer Griffith, Dr.P.H.
- Associate Dean for Research - Tiffany A. Radcliff, Ph.D.
- Assistant Dean for Finance and Administration - John O'Neill, M.B.A.
- Director of Student Affairs - Erin Schneider, M.P.H.

General Statement

Founded in 1998 as the first public health school in the nation with a focus on rural and underserved communities, the School of Public Health developed into a nationally ranked, fully accredited public health research, service and training program. After only nine years, *U.S. News & World Report* ranked the school as a Top 25 Graduate School in Public Health.

Offering classes at the College Station campus as well as other Texas locations through distance education, the school provides graduate level programs including two master's degrees (Master of Public Health and Master of Health Administration) in several public health disciplines: epidemiology, biostatistics, environmental health, occupational safety and health, health administration, policy and management, and health promotion and community health sciences. The school also offers a Doctor of Public Health with a concentration in epidemiology and environmental health, a Doctor of Public Health with a concentration in health promotion and community health sciences, and a Doctor of Philosophy in health services research.

The school provides an excellent forum for tomorrow's public health leaders to engage in a learning environment that builds on a wide array of research strengths and scholarly inquiry of a stellar faculty (seven of whom have received the prestigious designations of Regents Professors and two Distinguished Professors). Further, the research and practice links established by the faculty provide an extensive diversity of opportunities for students to work closely with professionals in applied public health settings.

Location

The School of Public Health's administration and faculty are located in a state-of-the-art, three-building complex in College Station, on the Texas A&M University west campus. The nearly 100,000-square-foot complex includes classrooms fully equipped with videoconferencing technology to support the school's innovative distance education programs that reach across the breadth of the state. The laboratory building provides a venue for the school's internationally regarded toxicology group to engage in exemplary public health work and provides a vehicle for training tomorrow's researchers. The administration building houses the administration and faculty. In addition, the school operates on-going regional instructional and research programs in McAllen.

Departments

Departments

- Department of Environmental and Occupational Health (p. 1215)
- Department of Epidemiology and Biostatistics (p. 1218)
- Department of Health Policy and Management (p. 1222)
- Department of Health Promotion and Community Health Sciences (p. 1225)

Interdepartmental Programs

- Public Health Certificate (p. 1215)
- Doctor of Philosophy in Health Services Research (p. 1202)
- Doctor of Public Health in Public Health Sciences (p. 1209)
- Master of Health Administration in Health Administration (p. 1197)
- Master of Public Health in Occupational Safety and Health (p. 1208)
- Master of Science in Public Health in Health Policy and Management (p. 1199)

Interdepartmental Degree Programs

Masters

- Master of Health Administration in Health Administration (p. 1197)
- Master of Public Health in Occupational Safety and Health (p. 1208)
- Master of Science in Public Health in Health Policy and Management (p. 1199)

Doctoral

- Doctor of Philosophy in Health Services Research (p. 1202)
- Doctor of Public Health in Public Health Sciences (p. 1209)

Certificates

- Public Health Certificate (p. 1215)

Master of Health Administration in Health Administration

The Master of Health Administration (MHA) is a professional degree program intended for students to enter or continue administrative practice in health service related settings. The mission of the MHA Program is to provide exceptional early# to mid#level careerists with a strong foundation to become leaders dedicated to improving health care services for all populations.

There are two tracks that students can choose to earn the MHA degree: 1) Resident and 2) Executive.

The Resident track of the MHA program is a 55-credit hour program that can be completed in 21 months (full-time) or 33 months (part-time) and is intended for applicants with limited healthcare experience. This track seeks to prepare students for competitive opportunities post-graduation, including administrative fellowships and entry-level positions in health services organizations. The Resident track curriculum includes a practicum allowing students to apply foundational knowledge in a health services organization. Application to the Resident track of the MHA program requires successful completion (i.e., a grade of "B" or better) of three undergraduate prerequisites: economics, statistics, and managerial accounting or finance.

The Executive track of the MHA program is tailored to individuals who are already employed within the health care industry and have demonstrated managerial and leadership experience. While no course prerequisites are required, ideal applicants will have a minimum of five years of progressive work experience and are seeking to expand their formal knowledge and skill set. The Executive track of the MHA program is a 48-credit hour program and takes 24 months to complete. This track is taught one

weekend a month and is offered only at the Houston Campus of the Texas A&M University Health Science Center in the Texas Medical Center.

For degree curricula associated with either track, see Master of Health Administration program tracks (<http://sph.tamhsc.edu/hpm/mha/mhatracks>).

Program Requirements

Program Requirements

Student's Advisory Committee (p. 1198)

Degree Plan (p. 1198)

Credit Requirements (p. 1198)

Transfer of Credit (p. 1198)

Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1198)

Student's Advisory Committee

The Student Advisory Committee for the MHA consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements. Students in this degree program receive advising prior to all semesters.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 55 hours of coursework is required for the resident track of the Master of Health Administration degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to successfully complete a Capstone course and practicum as part of the culminating experience requirement to graduate.

The Executive track of the MHA program is a 48-credit hour program. This track takes 24 months to complete, is taught one weekend a month, and is offered only at the Houston Campus of the Texas A&M University Health Science Center.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Health Administration degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MHA as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MHA degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisor, department chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1199)
- Time Limit (p. 1199)
- Scholastic Requirements (p. 1199)
- Foreign Languages (p. 1199)
- Internship or Practicum (p. 1199)
- Application for Degree (p. 1199)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MHA student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MHA program, he or she shall not be permitted to enroll in other MHA courses.

Foreign Languages

No specific language requirement exists for the Master of Health Administration degree program.

Internship or Practicum

Students in the MHA are required to fulfill a practicum requirement (PHPM 684). Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. The practicum is overseen by the School of Public Health Practicum Coordinator in conjunction with the school's master's curriculum committee. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the PHPM 684 course, and have no registration or university holds related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Public Health in Health Policy and Management

The **Master of Science in Public Health (MSPH)** is considered an equivalent professional public health master's degree and requires additional coursework in research methods and statistics.

The MSPH is a thesis degree program that has culminating experiences as part of the degree requirements. Students will also participate in a practicum demonstrating overall public health problem solving skills.

Note: The School of Public Health will not be accepting new students for the MSPH program from the 2015-2016 school year forward.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1199)
- Degree Plan (p. 1200)
- Credit Requirement (p. 1200)
- Transfer of Credit (p. 1200)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1200)
- Thesis (p. 1200)
 - Thesis Proposal (p. 1201)
 - Final Examination/Thesis Defense (p. 1201)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her department concerning appointment of the chair of the advisory committee. The student's advisory committee for the Master of Science degree will consist of no fewer than three graduate faculty representatives of the student's fields of study and research. The committee chair or one of the co-chairs must be a member of Graduate Faculty in the student's department.

Committee members must be comprised of at least one principal faculty member within SPH but external to the relevant department(s), all voting members must be members of the graduate faculty. The chair, in consultation with the student, will select the remainder of the advisory committee. The committee composition must be approved by the relevant department head.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree.

Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members can be replaced by petition for valid reasons, a committee cannot resign in masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, guidance and supervision of the thesis study/research and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. **The final degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than 90 days prior to the date of the final oral examination.**

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 45 hours of coursework is required for the MSPH degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to produce a thesis and participate in a Practicum. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the MSPH degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for**

transfer credit. Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MSPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 3 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MSPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisor, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Thesis

An acceptable thesis is required for the Master of Science in Public Health degree. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's department,

the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <https://ogsdps.tamu.edu>.

Before a student can be “cleared” by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head. The manuscript must be resubmitted as a new document, and the entire review process must begin again. All submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

The student must prepare a thesis proposal for approval by the student’s advisory committee and the head of the major department or chair of the intercollegiate faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can be also obtained on the website <http://rcb.tamu.edu>.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student’s GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master’s degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student’s advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student’s advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student’s major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Additional Requirements

Additional Requirements

- Residence (p. 1201)
- Time Limit (p. 1201)
- Scholastic Requirements (p. 1202)
- Foreign Languages (p. 1202)
- Internship or Practicum (p. 1202)
- Application for Degree (p. 1202)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be valid until seven years after the end of the semester in which it was taken. Graduate

credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has a thesis must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Scholastic Requirements

To maintain good academic standing, a MSPH student must maintain a minimum cumulative 3.00 GPR. If a student fails to attain a cumulative 3.00 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.00 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.00 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MSPH program, he or she shall not be permitted to enroll in other MSPH courses.

Foreign Languages

No specific language requirement exists for the Master of Science in Public Health degree program.

Internship or Practicum

Students in the MSPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Health Services Research

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

For degree curriculum see Department of Health Policy and Management (<http://sph.tamhsc.edu/hpm>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1203)
- Degree Plan (p. 1204)
- Transfer of Credit (p. 1204)
- Research Proposal (p. 1204)
- Examinations (p. 1204)
 - Preliminary Examination (p. 1204)
 - Preliminary Examination Format (p. 1205)
 - Preliminary Examination Scheduling (p. 1205)
 - Report of Preliminary Examination (p. 1205)
 - Retake of Failed Preliminary Examination (p. 1205)
 - Final Examination (p. 1206)
 - Report of Final Examination (p. 1206)
- Dissertation (p. 1206)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members

may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time

deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate

and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree

programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1207)
- Time Limit (p. 1207)
- Continuous Registration (p. 1207)
- Admission to Candidacy (p. 1207)
- Languages (p. 1207)
- 99-Hour Cap on Doctoral Degree (p. 1207)
- Application for Degree (p. 1208)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Public Health in Occupational Safety and Health

The **Master of Public Health (MPH)** is a multi-disciplinary professional degree program designed to provide graduate level practical training in areas specializing in delivering public health practice. The degree is offered in all core disciplines of public health; epidemiology, biostatistics, environmental and occupational health, health policy and management, and health promotion and community health sciences. The Master of Public Health is a non-thesis degree program that has culminating experiences as part of the degree requirements. Students will participate in a practicum demonstrating overall public health problem solving skills and a capstone class.

An individual with a baccalaureate degree or a physician licensed to practice medicine in the United States may apply for admission to the program. No coursework prerequisites exist for making a successful application to this degree program.

For degree curriculum, see the Department of Environmental and Occupational Health (<http://sph.tamhsc.edu/eoh>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1208)
- Degree Plan (p. 1208)
- Credit Requirement (p. 1208)
- Transfer of Credit (p. 1208)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1209)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1209)
- Time Limit (p. 1209)
- Scholastic Requirements (p. 1209)
- Foreign Languages (p. 1209)
- Internship or Practicum (p. 1209)
- Application for Degree (p. 1209)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Public Health in Public Health Sciences

The **Doctor of Public Health (DrPH)** is an advanced professional degree for those whose career goals are in the area of professional practice in public health, including current and potential leaders in public health practice. The DrPH prepares candidates for a career in high-level administration, teaching, or practice, where advance analytical and conceptual capabilities are requisite.

Applicants will choose to focus on one of three concentration areas:

- Health Promotion and Community Health Sciences,
- Epidemiology, or
- Environmental Health.

The programs are designed for the research-grounded practitioner; a graduate may be expected to fill instructional, supervisory, and administrative positions in which educational services are to be rendered.

Applicants to the DrPH will hold a master's degree. For further information regarding admission, please visit <http://sph.tamhsc.edu/future>.

Although substantively different from the PhD degree in education, the DrPH degree requires equivalent admission qualifications, standards of scholarship and breadth and depth of study. For additional requirements, see the department doctoral handbook.

Because graduates of the program are expected to demonstrate a high level of professional skill and educational statesmanship, only those candidates who show a consistently high level of professional performance in their academic studies, in their role-related studies, in their internship experience, and in the completion of their records of study will be recommended for the degree.

See the Department of Health Promotion and Community Health Sciences (<http://sph.tamhsc.edu/hpchs>), Department of Epidemiology and Biostatistics (<http://sph.tamhsc.edu/epi-bio>), and Department of Environmental and Occupational Health (<http://sph.tamhsc.edu/eoh>) for the degree curriculum for each concentration.

Steps to Fulfill Doctoral Degree Requirements

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

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|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1211)
- Degree Plan (p. 1211)
- Transfer of Credit (p. 1212)
- Research Proposal (p. 1212)
- Examinations (p. 1212)
 - Preliminary Examination (p. 1212)
 - Preliminary Examination Format (p. 1212)
 - Preliminary Examination Scheduling (p. 1213)
 - Report of Preliminary Examination (p. 1213)
 - Retake of Failed Preliminary Examination (p. 1213)
 - Final Examination (p. 1213)
 - Report of Final Examination (p. 1214)
- Dissertation (p. 1214)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on the respective Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>. A minimum of 60 hours is required on the degree plan for the Doctor of Public Health for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 60 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 90-hour degree plan. Completion of DDS/DMD, DVM or MD degrees at a foreign institution requires completion of a minimum of 90 hours for the Doctor of Public Health. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (Research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards or recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research

compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- All English language proficiency requirements are satisfied.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members.

If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee paid through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1214)
- Time Limit (p. 1214)
- Continuous Registration (p. 1215)
- Admission to Candidacy (p. 1215)
- Foreign Languages (p. 1215)
- Internship or Practicum (p. 1215)
- 130 Hour Cap (for DrPH) (p. 1215)
- Application for Degree (p. 1215)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degrees may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of 10 consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than 10 calendar

years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within 4 calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Public Health who has completed all coursework on his/her degree plan other than 691 (Research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690, 691 and 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Foreign Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

Internship or Practicum

Students in the DRPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

130 Hour Cap (for DrPH)

There is a state mandated cap on number of hours a student can enroll in without penalty. The cap is currently 130 hours (approximately 5 and

one-half years), and once students reach this cap, they are required to pay out-of-state tuition on all subsequent hours until they graduate.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Public Health - Certificate

The Public Health Certificate Program is designed as an academic program specifically for working professionals in the public health field and for those interested with a general overview of the core functions and disciplines of public health to provide the tools that are fundamental in serving Texas communities.

This certificate is best suited for individuals who may want to pursue a graduate degree in the future, but who want to experience coursework to determine the feasibility of such activity. Completed coursework may be applied to degree-seeking pathways depending on grade received.

Information about admission and application requirements can be found at: <http://sph.tamhsc.edu/degrees/certificate.html>

Students are not currently being admitted to this certificate program at this time.

Program Requirements

Course Requirements

Students must complete the following courses to earn the Public Health Certificate:

- PHEB 600 – Introduction to Epidemiology
- PHEB 602 – Biostatistics I
- PHEO 600 – Principles of Environmental and Occupational Health
- HPCH 603 – Social and Behavioral Determinants of Health
- PHPM 605 – Introduction to Health Policy and Management

Grading

Certificate students will have the flexibility of taking classes any given semester.

- Applicants must hold a Bachelor's degree from an accredited college or university with a minimum grade point average (GPA) of 3.0.
- All courses taken will be 600-level courses (for a letter grade).
- The Public Health Certificate is awarded upon achieving a "C" or better in all required courses.
- Certificate-seeking students wishing to pursue a graduate degree will proceed through the application process as all other applicants.
- 600-level coursework completed while a certificate-seeking student may be considered for inclusion on the student's degree plan (following the school's course petition process for approval) once admitted into a degree program within the school.

Department of Environmental and Occupational Health

<http://sph.tamhsc.edu/eoh/>

Department Head: Mark E. Benden CPE, PhD

The Department of Environmental and Occupational Health is concerned with the health effects of exposures to air and water pollution, pesticides, organic solvents, dusts and physical hazards, which occur in the environment, the home or the workplace.

The department draws from the knowledge generated from disciplines that contribute to recognizing, assessing, and controlling these risks that include epidemiology, toxicology, microbiology, safety engineering, industrial hygiene, medicine, nursing, law and labor economics. The department includes a multidisciplinary core faculty and a large adjunct faculty.

For degree curricula see Department of Environmental and Occupational Health (<http://sph.tamhsc.edu/eoh>).

Faculty

Appiah, Bernard, Assistant Professor
Environmental & Occptnl Hlth
DrPH, Texas A&M Health Science Center School of Public Health, 2013

Benden, Mark E, Associate Professor
Environmental & Occptnl Hlth
PHD, Texas A&M University, 2006

Carrillo, Genny, Associate Professor
Environmental & Occptnl Hlth
PHD, Tulane University, School of Public Health, 1993

Cizmas, Leslie H, Instructional Assistant Professor
Environmental & Occptnl Hlth
PHD, Texas A&M University, 2003

Johnson, Natalie M, Assistant Professor
Environmental & Occptnl Hlth
PHD, Texas A&M University, 2010

Maddock, Jason E, Professor
Environmental & Occptnl Hlth
PHD, University of Rhode Island, 1999

McDonald, Thomas J, Professor
Environmental & Occptnl Hlth
PHD, Texas A&M University, 1988

Mendoza, Itza, Assistant Professor
Environmental & Occptnl Hlth
PHD, Texas A&M University, 2007

Ory, Marcia G, Professor
Environmental & Occptnl Hlth
PHD, Purdue University, 1976

Peres, S Camille, Assistant Professor
Environmental & Occptnl Hlth
PHD, Rice University, 2005

Pickens, Adam W, Instructional Assistant Professor
Environmental & Occptnl Hlth
PHD, Texas Tech University, 2008

Rene, Antonio A, Associate Professor
Environmental & Occptnl Hlth
PHD, University of Texas School of Public Health, 1990

Sansom, Garrett T, Research Assistant Professor
Environmental & Occptnl Hlth
DrPH, Texas A&M University, 2016

Sharma, Virender K, Professor
Environmental & Occptnl Hlth
PHD, University of Miami, 1989

Smith, Matthew L, Associate Professor
Environmental & Occptnl Hlth
PHD, Texas A&M University, 2008

Masters

- Master of Public Health in Environmental Health (p. 1216)

Master of Public Health in Environmental Health

The **Master of Public Health (MPH)** is a multi-disciplinary professional degree program designed to provide graduate level practical training in areas specializing in delivering public health practice. The degree is offered in all core disciplines of public health; epidemiology, biostatistics, environmental and occupational health, health policy and management, and health promotion and community health sciences. The Master of Public Health is a non-thesis degree program that has culminating experiences as part of the degree requirements. Students will participate in a practicum demonstrating overall public health problem solving skills and a capstone class.

An individual with a baccalaureate degree or a physician licensed to practice medicine in the United States may apply for admission to the program. No coursework prerequisites exist for making a successful application to this degree program.

For degree curriculum, see the Department of Environmental and Occupational Health (<http://sph.tamhsc.edu/eoh>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1216)
- Degree Plan (p. 1217)
- Credit Requirement (p. 1217)
- Transfer of Credit (p. 1217)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1217)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdpps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1217)
- Time Limit (p. 1217)
- Scholastic Requirements (p. 1218)
- Foreign Languages (p. 1218)
- Internship or Practicum (p. 1218)
- Application for Degree (p. 1218)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Epidemiology and Biostatistics

<http://sph.tamhsc.edu/epi-bio/index.html>

Department Head: Xiaohui Xu, PhD

The Department of Epidemiology and Biostatistics prepares students for research or practice in academia and numerous public and private health arenas. Students will acquire the expertise necessary to design and implement basic and applied research in disease etiology, control and prevention.

Epidemiological and biostatistical concepts, theories, and methods are fundamental building blocks upon which the public health sciences are built.

Students will become competent users of critical health related information, as well as proficient in the use of epidemiologic research methods applicable to various health and public health related settings.

For degree curricula see Department of Epidemiology and Biostatistics (<http://sph.tamhsc.edu/epi-bio>).

Faculty

Clendenin, Angela G, Instructional Assistant Professor
Epidemiology & Biostatistics
PHD, Texas A&M University, 2017

Fischer, Rebecca Susann Bryson, Assistant Professor
Epidemiology & Biostatistics
PHD, The University of Texas School of Public Health, 2014

Gorman, Dennis M, Professor
Epidemiology & Biostatistics
PHD, University of Essex, 1988

Han, Daikwon, Associate Professor
Epidemiology & Biostatistics
PHD, University of Buffalo, 2003

Han, Gang, Associate Professor
Epidemiology & Biostatistics
PHD, The Ohio State University, 2008

Perez Patron, Maria J, Research Assistant Professor
Epidemiology & Biostatistics
PHD, Johns Hopkins University, Bloomberg School of Public Health, 2012

Regan, Annette Karena, Assistant Professor
Epidemiology & Biostatistics
PHD, University of Western Australia, 2016

Taylor, Nicholas J, Assistant Professor
Epidemiology & Biostatistics
PHD, University of North Carolina, 2014

Xu, Xiaohui, Associate Professor
Epidemiology & Biostatistics
PHD, University of Pittsburgh, 2007

Zanwar, Preeti C, Instructional Assistant Professor
Epidemiology & Biostatistics
PHD, University of Texas, 2012

Zhao, Hongwei, Professor
Epidemiology & Biostatistics
PHD, Harvard University School of Public Health, 1997

Zheng, Qi, Professr
Epidemiology & Biostatistics
PHD, Texas A&M University, 1993

Masters

- Master of Public Health in Biostatistics (p. 1218)
- Master of Public Health in Epidemiology (p. 1220)

Certificates

- Maternal and Child Health Certificate

Master of Public Health in Biostatistics

The **Master of Public Health (MPH)** is a multi-disciplinary professional degree program designed to provide graduate level practical training

in areas specializing in delivering public health practice. The degree is offered in all core disciplines of public health; epidemiology, biostatistics, environmental and occupational health, health policy and management, and health promotion and community health sciences. The Master of Public Health is a non-thesis degree program that has culminating experiences as part of the degree requirements. Students will participate in a practicum demonstrating overall public health problem solving skills and a capstone class.

An individual with a baccalaureate degree or a physician licensed to practice medicine in the United States may apply for admission to the program. No coursework prerequisites exist for making a successful application to this degree program.

For degree curriculum, see the Department of Epidemiology and Biostatistics (<http://sph.tamhsc.edu/epi-bio>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1219)
- Degree Plan (p. 1219)
- Credit Requirement (p. 1219)
- Transfer of Credit (p. 1219)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1219)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 as part of the

culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.

9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1220)
- Time Limit (p. 1220)
- Scholastic Requirements (p. 1220)
- Foreign Languages (p. 1220)
- Internship or Practicum (p. 1220)
- Application for Degree (p. 1220)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have

completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Public Health in Epidemiology

The **Master of Public Health (MPH)** is a multi-disciplinary professional degree program designed to provide graduate level practical training in areas specializing in delivering public health practice. The degree is offered in all core disciplines of public health; epidemiology, biostatistics, environmental and occupational health, health policy and management, and health promotion and community health sciences. The Master of Public Health is a non-thesis degree program that has culminating experiences as part of the degree requirements. Students will participate in a practicum demonstrating overall public health problem solving skills and a capstone class.

An individual with a baccalaureate degree or a physician licensed to practice medicine in the United States may apply for admission to the program. No coursework prerequisites exist for making a successful application to this degree program.

For degree curriculum see Department of Epidemiology and Biostatistics (<http://sph.tamhsc.edu/epi-bio>).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1220)
- Degree Plan (p. 1220)
- Credit Requirement (p. 1221)
- Transfer of Credit (p. 1221)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1221)

Student Advisory Committee

On-Campus and Distance Education Degree Programs

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines

imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

On-Campus and Distance Education Degree Programs

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.
8. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
9. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1221)
- Time Limit (p. 1221)
- Scholastic Requirements (p. 1222)
- Foreign Languages (p. 1222)
- Internship or Practicum (p. 1222)
- Application for Degree (p. 1222)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

On-Campus and Distance Education Degree Programs

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

On-Campus and Distance Education Degree Programs

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Maternal and Child Health - Certificate

The Graduate Certificate in Maternal and Child Health (MCH) develops students' MCH competencies enabling graduates to improve health service delivery to all mothers, children and families. This certificate focuses on the foundations of MCH, such as understanding Title V programs, health disparities in MCH, life-course approach and general knowledge about MCH populations and common public health concerns. This is an interdisciplinary certificate that partners with departments across the Texas A&M School of Public Health, including the College of Education and Human Development and the Bush School of Government and Public Service. This allows the MCH certificate to offer electives in areas ranging from reproductive and perinatal epidemiology to the impact of policy and security on women's health.

To learn more about the program, go to School of Public Health Certificates (<https://sph.tamhsc.edu/degrees/certificate.html>).

To apply for the program, go to Graduate Certificate Program Application (https://tamuhsc.co1.qualtrics.com/jfe/form/SV_cwqlPFHaDAoN5qt).

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|--------------------------------------------------|-----------------------|
| HPCH 613 | Program Evaluation | 3 |
| HPCH 665 | Proposal Writing and Grants Management | 3 |
| PHEB 621 | Foundations of Maternal and Child Health | 3 |
| Select one of the following: | | 3 |
| HLTH 634 | Women's Health | |
| INTA 645 | Women and Nations | |
| PHEB 622 | Reproductive And Perinatal Epidemiology | |
| PHEO 613 | Introduction to Environmental Health Disparities | |
| Total Semester Credit Hours | | 12 |

Department of Health Policy and Management

<http://sph.tamhsc.edu/hpm/>

Department Head: Michael Morrissey, PhD

The degree programs in the Department of Health Policy and Management integrate instruction, research, and practice. The faculty and many of the students are engaged in substantial research and outreach efforts through several types of research and/or training focused centers and programs. Many other students are employed in hospitals, physician groups and other health organizations.

The School of Public Health offers state-of-the-art classrooms, labs, and offices that support the work of our department, students and faculty. The department's talented faculty and several academic programs rely on these resources to serve a diverse student body at College Station and at several distance education sites across Texas.

For program curricula see Department of Health Policy and Management (<http://sph.tamhsc.edu/hpm>).

Faculty

Bolin, Jane L, Professor
Health Policy & Management
PHD, Pennsylvania State University, 2002
JD, University of Oregon School of Law, 1982

Buckley Jr, John J, Professor of the Practice
Health Policy & Management
MBA, George Washington University, 1969

Callaghan, Timothy H, Assistant Professor
Health Policy & Management
PHD, University of Minnesota, Twin Cities, 2016

Carrino, Gerard E, Instructional Professor
Health Policy & Management
PHD, Columbia University Mailman School of Public Health, 2005

Cote, Murray J, Associate Professor
Health Policy & Management
PHD, Texas A&M University, 1996

Fairchild, Amy L, Professor
Health Policy & Management
PHD, Columbia University, 1997

Ferdinand, Alva O, Assistant Professor
Health Policy & Management
PHD, University of Alabama Birmingham, 2013

Griffith, Jennifer M, Instructional Assistant Professor
Health Policy & Management
DrPH, University of North Carolina Chapel Hill, 2004

Hatala, Jeffrey J, Instructional Assistant Professor
Health Policy & Management
PHD, University of South Carolina School of Public Health, 2013

Kash, Bitia A, Professor
Health Policy & Management
PHD, Texas A&M Health Science Center - School of Rural Public Health, 2007

Kum, Hye Chung, Associate Professor
Health Policy & Management
PHD, University of North Carolina - Chapel Hill, 2004

Lin, Szu-Hsuan, Instructional Assistant Professor
Health Policy & Management
PHD, Texas A&M Health Science Center, School of Public Health, 2015

McMaughan Moudouni, Darcy K, Assistant Professor
Health Policy & Management
PHD, Texas A&M University Health Science Center, 2010

Morrisey, Michael A, Professor
Health Policy & Management
PHD, University of Washington, Seattle, 1979

Ohsfeldt, Robert L, Professor
Health Policy & Management
PHD, University of Houston, 1983

Quiram, Barbara J, Professor
Health Policy & Management
PHD, Texas A&M University, 1995
MPA, Texas A&M University, 1991

Radcliff, Tiffany A, Professor
Health Policy & Management
PHD, School of Public Health University of Minnesota, 2000

Ramirez, Gilbert, Professor
Health Policy & Management
DrPH, University of Texas Health Science Center at Houston, 1986

Schmit, Cason D, Assistant Professor
Health Policy & Management
JD, Arizona State University, 2012

Tomaszewski, Lesley E, Instructional Assistant Professor
Health Policy & Management
PHD, Texas A&M University, 2003

Washburn, David J, Assistant Professor
Health Policy & Management
PHD, Harvard T.H. Chan School of Public Health, 2011

Masters

- Master of International Affairs (INTA) and Master of Public Health (PHPM) Combined Degree Program (p. 986)
- Master of Public Health in Health Policy and Management (p. 1223)

Doctoral

- Master of Public Service and Administration (PSAA) and Doctor of Philosophy (HRSA) Collaborative Degree Program (p. 1004)

Certificates

- Health Systems Management Certificate (p. 1225)

Master of Public Health in Health Policy and Management

The **Master of Public Health (MPH)** is a multi-disciplinary professional degree program designed to provide graduate level practical training in areas specializing in delivering public health practice. The degree is offered in all core disciplines of public health; epidemiology, biostatistics, environmental and occupational health, health policy and management, and health promotion and community health sciences. The Master of Public Health is a non-thesis degree program that has culminating experiences as part of the degree requirements. Students will participate in a practicum demonstrating overall public health problem solving skills and a capstone class.

An individual with a baccalaureate degree or a physician licensed to practice medicine in the United States may apply for admission to the program. No coursework prerequisites exist for making a successful application to this degree program.

For degree curriculum see Department of Health Policy and Management (<http://sph.tamhsc.edu/hpm>)

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1223)
- Degree Plan (p. 1224)
- Credit Requirement (p. 1224)
- Transfer of Credit (p. 1224)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1224)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point

of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

In the case of established collaborative degree programs, a minimum of 42 hours of coursework is required for the Master of Public Health degree.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1224)
- Time Limit (p. 1224)
- Scholastic Requirements (p. 1224)
- Foreign Languages (p. 1225)
- Internship or Practicum (p. 1225)
- Application for Degree (p. 1225)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter.

Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Health Systems Management - Certificate

The Health Systems Management Certificate includes five courses from the Department of Health Policy & Management and is intended primarily for those who already hold a bachelor's degree and are, or expect to be, in administrative or supervisory roles, but lack formal training in health management. A list of the available courses are available at the Health Systems Management Certificate requirements website (p. 1225).

Students are not currently being admitted to this certificate program at this time.

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------------------|----------------------------------------------|-----------------------|
| Required | | |
| PHPM 601 | Foundations of Public Health | 3 |
| PHPM 605 | Introduction to Health Policy and Management | 3 |
| PHPM 614 | Strategic Planning and Marketing | 3 |
| PHPM 616 | Management of Human Resources | 3 |
| PHPM 623 | Health Care Financial Management | 3 |
| Substitution Options ¹ | | |
| PHPM 617 | Quality and Process Improvement | |
| PHPM 620 | Operations Management | |

PHPM 631 Health Information Management Systems

Total Semester Credit Hours

15

¹ You may substitute up to two of the following courses for PHPM 614 and/or PHPM 616.

Note: PHPM 617 is a prerequisite for PHPM 620.

Department of Health Promotion and Community Health Sciences

<http://sph.tamhsc.edu/hpchs/index.html>

Department Head: John Spengler, JD, PhD

The Department of Health Promotion and Community Health Sciences promotes healthy living and prepares students to identify the role of biological, behavioral, environmental, and social forces on population health. Our students will have the opportunity to apply these elements when planning and evaluating programs, services and policies designed to improve the health of individuals and communities.

Our health promotion and community health students have opportunities to work in a broad and diverse range of organizations. Our students have worked locally, state-wide, nationally and internationally for non-profits, government agencies and corporations in jobs that promote and improve health.

For degree curricula see Department of Health Promotion and Community Health Sciences (<http://sph.tamhsc.edu/hpchs>).

Faculty

Burdine, James N, Professor

Hlth Promotion & Comm Hlth Sci

DrPH, The University of North Carolina at Chapel Hill, School of Public Health, 1979

Clark, Heather, Research Assistant Professor

Hlth Promotion & Comm Hlth Sci

DrPH, Texas A&M University, 2014

Colwell, Gregory B, Professor

Hlth Promotion & Comm Hlth Sci

PHD, Indiana University - Bloomington, 1992

Dowdy, Diane M, Instructional Assistant Professor

Hlth Promotion & Comm Hlth Sci

PHD, Texas A&M University, 1990

Garcia, Robert, Instructional Assistant Professor

Hlth Promotion & Comm Hlth Sci

PHD, University of Southern California, 2017

Hong, Yan, Associate Professor

Hlth Promotion & Comm Hlth Sci

PHD, Johns Hopkins University, Bloomberg School of Public Health, 2007

Jones-Mckyer, Ellisa L, Professor

Hlth Promotion & Comm Hlth Sci

PHD, Indiana University, 2005

Ma, Ping, Assistant Professor
 Hlth Promotion & Comm Hlth Sci
 PHD, Tulane University School of Public Health and Tropical Medicine,
 2013

Mier, Nelda, Instructional Associate Professor
 Hlth Promotion & Comm Hlth Sci
 PHD, University of New Mexico, 2002

Sharkey, Joseph R, Professor
 Hlth Promotion & Comm Hlth Sci
 PHD, University of North Carolina - Chapel Hill, 2002

Spengler, John O, Professor
 Hlth Promotion & Comm Hlth Sci
 PHD, Indiana University, 1999

Stasi, Selina M, Instructional Assistant Professor
 Hlth Promotion & Comm Hlth Sci
 PHD, Texas A&M University, 2018

Tai-Seale, Thomas S, Instructional Associate Professor
 Hlth Promotion & Comm Hlth Sci
 DrPH, University of California - Los Angeles, 1993

Masters

- Master of International Affairs (INTA) and Master of Public Health (HPCH) Combined Degree Program (p. 982)
- Master of Public Health in Health Promotion and Community Health Sciences (p. 1226)

Certificates

- Global Health Certificate (p. 1227)
- Health Coaching for Chronic Disease Prevention and Management Certificate (p. 1228)

Master of Public Health in Health Promotion and Community Health Sciences

The **Master of Public Health (MPH)** is a multi-disciplinary professional degree program designed to provide graduate level practical training in areas specializing in delivering public health practice. The degree is offered in all core disciplines of public health; epidemiology, biostatistics, environmental and occupational health, health policy and management, and health promotion and community health sciences. The Master of Public Health is a non-thesis degree program that has culminating experiences as part of the degree requirements. Students will participate in a practicum demonstrating overall public health problem solving skills and a capstone class.

An individual with a baccalaureate degree or a physician licensed to practice medicine in the United States may apply for admission to the program. No coursework prerequisites exist for making a successful application to this degree program.

For degree curriculum see Department of Health Promotion and Community Health Sciences (<http://sph.tamhsc.edu/hpchs>)

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1226)
- Degree Plan (p. 1226)
- Credit Requirement (p. 1226)
- Transfer of Credit (p. 1226)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1227)

Student Advisory Committee

The Student Advisory Committee for the MPH consists of an assigned faculty advisor. After receiving admission to the program and before enrolling for coursework, the student will consult with their assigned faculty advisor to receive additional information related to curriculum and processing of the degree plan. The faculty advisor must have graduate faculty membership in the academic program. If at any point of the student's time in pursuit of the degree the assigned advisor is no longer available, the department will assign a new advisor and require a comprehensive advisory session to ensure the student is making progress according to degree program requirements.

Degree Plan

The student's advisor, in consultation with the student, will develop the proposed degree plan. The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadlines imposed by the student's college, and no later than the dates announced in the Office of Graduate and Professional Studies calendar of deadlines for graduation.

The proposed/final degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisor to correct deficiencies in the student's academic preparation.

Credit Requirement

A minimum of 45 hours of coursework is required for the Master of Public Health degree. To demonstrate integration and application of subject matter learned and the development of written and oral communication skills, a student will be required to take SOPH 680 as part of the culminating experience requirement to graduate. Concentration and elective courses vary among the core disciplines and will be addressed during advising and creation of the degree plan. Electives may be taken upon approval/advice from the student's assigned advisor and will be listed by rubric, section, and description in the degree plan.

In the case of established collaborative degree programs, a minimum of 42 hours of coursework is required for the Master of Public Health degree.

Transfer of Credit

A student may transfer up to 9 hours of graduate credit to the Master of Public Health degree program on the advice and approval of the student's advisory committee, department Chair, and school Academic Affairs Dean, and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or

approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F, or U may not be absolved by transfer work. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward another degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extensions, and Certain Other Courses

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree with the following limitations.

1. The maximum number of credit hours allowed toward the MPH as transfer credit is 9.
2. Courses previously used for another degree are not acceptable for credit.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. A maximum of 6 hours of 684 (Professional Internship/Practicum), and 9 hours of 685 (Directed Studies), if approved on the degree plan.
5. Undergraduate courses are not allowed to transfer to the MPH degree program.
6. Continuing education courses may not be used for graduate credit.
7. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee, department Chair, school Academic Affairs Office, and approved by the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1227)
- Time Limit (p. 1227)
- Scholastic Requirements (p. 1227)
- Foreign Languages (p. 1227)
- Internship or Practicum (p. 1227)
- Application for Degree (p. 1227)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Time Limit

All degree requirements for a master's degree must be completed within a period of seven consecutive years. Coursework which is over seven calendar years old may not be applied to master's degree. Time limits for coursework on the degree plan may also apply to transfer coursework.

Scholastic Requirements

To maintain good academic standing, a MPH student must maintain a minimum cumulative 3.000 GPR. If a student fails to attain a cumulative 3.000 GPR, he or she is placed on academic probation. A student on academic probation must raise his/her cumulative GPR to a 3.000 or above according to requirements to be set forth in the probation letter. Typically, this means raising the cumulative GPR to a 3.000 or higher by the end of the next long semester (fall/spring). If this requirement is not met, the School of Public Health's Academic Affairs Office will recommend that the Office of Graduate and Professional Studies block the student from further enrollment. If a student is blocked from further enrollment in the MPH program, he or she shall not be permitted to enroll in other MPH courses.

Foreign Languages

No specific language requirement exists for the Master of Public Health degree program.

Internship or Practicum

Students in the MPH are required to fulfill a practicum requirement. Specific course names and numbers by department are PHEB 684, PHEO 684, PHPM 684, and HPCH 684. Instructions on submission and successful completion of the practicum are posted on the School of Public Health practicum website as well as with the department's practicum coordinator. Students are to work specifically with their department practicum coordinator on meeting this curriculum course requirement. Students must be in good academic standing, have completed all core public health courses, or be enrolled concurrently in no more than one core course at the time they enroll in the 684 course, and have no registration or university blocks related to enrollment.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Global Health - Certificate

This interdisciplinary certification is available to all Master's students at Texas A&M. Its purpose is to teach those who are interested in public health about global perspectives on the topic, encourage students to consider careers in a variety of settings around the world, and to promote research and innovation in addressing the myriad public health problems seen around the world. With a cross-disciplinary perspective, students are assured of receiving a broad understanding of global health challenges and opportunities.

To learn more about the program, go to School of Public Health Certificates (<https://sph.tamhsc.edu/degrees/certificate.html>).

To apply for the program, go to Graduate Certificate Program Application (https://tamuhsc.co1.qualtrics.com/jfe/form/SV_cwqlPFHaDAoN5qt).

Program Requirements

| Code | Title | Semester Credit Hours |
|------------------------------|----------------------------------------------------------|-----------------------|
| HPCH 604 | Social Ecology and Global Health | 3 |
| HPCH 625 | Health of Refugees and Displaced Populations | 3 |
| or HPCH 60 | or Biological Basis of Health and Common Diseases | |
| PHEO 612 | Global Environmental Health | 3 |
| HPCH 684 | Practicum ¹ | 3 |
| or SOPH 67 | or Global Public Health Systems and Practice Experiences | |
| Select one of the following: | | 3 |
| PHPM 638 | Global Health Systems: Design & Analysis | |
| PHPM 639 | Global Health | |
| HLTH 607 | International Health | |
| Total Semester Credit Hours | | 15 |

¹ MPH students must complete an international or an international-serving practicum placement through their department (HPCH 684). Non-MPH students must complete SOPH 670, International Practicum.

Certificate classes will be considered for inclusion as electives on MPH degree plans. Inclusion on other degree plans will be at the discretion of the applicable school or college.

Health Coaching for Chronic Disease Prevention and Management - Certificate

The Department of Health Promotion and Community Health Sciences offers a Health Coaching for Chronic Disease Prevention and Management Certificate.

The increasing need to prevent and treat chronic diseases through behavioral changes are creating new employment opportunities for those who have recognizable credentials (certification) in an increasingly recognized specialty (health coaching).

Health coaches are a new and vital part of our evolving health care system. They work independently or with primary care providers and employers to help clients, patients and employees achieve health care goals. The benefits to using a health coach are substantial: they tailor health promotion programs to the client; they help primary care providers more efficiently and effectively deliver care; and they help employers reduce health care costs and maintain a healthier workforce.

Our program is unique in several ways:

- It concentrates on the prevention and management of chronic disease — it is not an athletic training program.

- It provides graduate-level training on the etiology of common chronic diseases.
- It is based on a rigorous up-to-date review of diet and lifestyle research.
- It reviews current clinical guidelines for the prevention and treatment of common chronic diseases.
- It provides focused training in the techniques of motivational interviewing and other valuable behavior change techniques.

To learn more about the program, go to School of Public Health Certificates (<https://sph.tamhsc.edu/degrees/certificate.html>).

To apply for the program, go to Graduate Certificate Program Application (https://tamuhsc.co1.qualtrics.com/jfe/form/SV_cwqlPFHaDAoN5qt).

Program Requirements

| Code | Title | Semester Credit Hours |
|-----------------------------|------------------------------------------------------------------------------------------------|-----------------------|
| HPCH 603 | Social and Behavioral Determinants of Health ¹ | 3 |
| or HPCH 604 | or Social Ecology and Global Health | |
| HPCH 607 | Biological Basis of Health and Common Diseases ¹ | 3 |
| HPCH 640 | Diet and Lifestyle Interventions for Obesity, Diabetes and Cardiovascular Disease ¹ | 3 |
| HPCH 641 | Coaching Health Behavior Change ¹ | 3 |
| Total Semester Credit Hours | | 12 |

¹ Must make a grade of "A" or "B".

College of Science

<http://www.science.tamu.edu>

Administrative Officers

Dean - Valen E. Johnson, Ph.D.

Executive Associate Dean - Mark J. Zoran, Ph.D.

Assistant Dean for Diversity and College Climate - Derya Akleman, Ph.D.

Associate Dean for Research - James Batteas, Ph.D.

Assistant Dean for Student Affairs - Yvette Hester, Ph.D.

Senior Advisor to the Dean - W. Michael Kemp, Ph.D.

Associate Dean for International Programs - Paulo Lima-Filho, Ph.D.

Associate Dean for Undergraduate Programs - Lucas Macri, Ph.D.

Associate Dean for External Relations - Marlan O. Scully, Ph.D.

Associate Dean for Assessment - Suojin Wang, Ph.D.

Departments

Departments

Department of Biology (p. 1229)

Department of Chemistry (p. 1252)

Department of Mathematics (p. 1265)

Department of Physics and Astronomy (p. 1281)

Department of Statistics (p. 1310)

Interdepartmental Programs

- Computational Sciences Certificate (p. 1229)

Interdepartmental Programs

- Computational Sciences Certificate (p. 1229)

Computational Sciences - Certificate

The Institute for Scientific Computation developed the Computational Sciences Certificate Program to meet the increased need for computational techniques that help solve complex science and engineering problems. This program targets science and engineering students enrolled in graduate studies, providing them with a broad-based multidisciplinary enhancement to their degree program and preparing them with the intellectual infrastructure necessary as a leader in computational science, engineering, and technology. By completing this certification program, a graduate will receive an official certified transcript that will add value and marketability to their advanced degree. The Computational Sciences Certificate Program provides formal documentation on a student's transcript that they successfully completed courses focused on computational aspects that supplement their degree in science or engineering. To fulfill the certification requirements, a student must complete four total courses (one core and three electives), as described by the program curriculum, and a capstone project within their home department. For more information, visit <http://isc.tamu.edu/>.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------|
| Core Courses | | 3 |
| Select one of the following | | |
| MATH 609 | Numerical Analysis | |
| STAT 604 | Topics in Statistical Computations | |
| CSCE 659/ | Parallel/Distributed Numerical | |
| ECEN 659 | Algorithms and Applications ¹ | |
| Elective Courses | | 9 |
| Select three of the following, one of which must be exclusive of the student's home department ² | | |
| AERO 615 | Computational Fluid Dynamics for Aerospace Applications | |
| CSCE 603 | Database Systems and Applications | |
| CSCE 605 | Compiler Design | |
| CSCE 626 | Parallel Algorithm Design and Analysis | |
| CSCE 654 | Supercomputing | |
| CVEN 680 | Advanced Computation Methods for Fluid Flow | |
| CVEN 688 | Computational Fluid Dynamics | |
| GEOP 620 | Geophysical Inverse Theory | |
| MATH 610 | Numerical Methods in Partial Differential Equations | |

MATH 648 Computational Algebraic Geometry

MATH 661 Mathematical Theory of Finite Element Methods

MATH 676 Finite Element Methods in Scientific Computing

MEEN 672 Introduction to Finite Element Method

NUEN 618 Multiphysics Computations in Nuclear Science and Engineering

OCNG 618 Numerical Methods for the Geosciences

PETE 656 Advanced Numerical Methods for Reservoir Simulation

STAT 605 Advanced Statistical Computations

STAT 608 Regression Analysis

STAT 626 Methods in Time Series Analysis

STAT 636 Applied Multivariate Analysis and Statistical Learning

CSCE 620/ Computational Geometry
VIZA 670

MATH 660/ Computational Linear Algebra
CSCE 660

Other

Capstone Project³

Total Semester Credit Hours

12

¹ MATH 609 will also satisfy the CSCE 653 prerequisite.

² With approval by the director of the Institute for Scientific Computation (ISC), student may substitute a course outside those listed as elective options. In such situations, the student must justify the substitution to and seek approval from the ISC's director *prior* to enrolling in the course. The director will include their support for the substitution in a memorandum to the Office of Graduate Studies (OGS) after the student files their degree plan with OGS and copies of these documents with the ISC.

³ The capstone project's goal is to provide students with experience in the computational sciences. The capstone project may be fulfilled by:

1. an independent study graduate course within the student's home department, or
2. an independent study graduate course outside the student's home department, or
3. as part of a MS thesis or project required by the student's home department, or
4. as part of a PhD dissertation.

To fulfill this requirement, the ISC's associate director or director must approve the capstone project, certify its computational component, and document its completion.

Department of Biology

<http://www.bio.tamu.edu>

Head: T. McKnight

Resources for Graduate Study

The Department of Biology offers graduate programs designed to prepare students for careers in academic institutions, government agencies and industry. The Biological Sciences Complex is centrally

located on the campus of Texas A&M University. Graduate research is emphasized in over 50 laboratories that contain modern and sophisticated instrumentation for cellular, molecular, organismal and ecological studies. These laboratories provide opportunities for a broad spectrum of research specializations. The Microscopy Imaging Center, animal care facilities and a state-of-the-art DNA sequencing laboratory are among the many facilities housed in the Biological Sciences Complex.

The Department of Biology faculty has research interests that interface with those of faculty in the Colleges of Agriculture and Life Sciences, Geosciences, Medicine and Veterinary Medicine. Biology faculty participate in interdisciplinary programs in biological clocks, filamentous fungi, genetics, genomics, neuroscience and plant sciences. Cooperation is encouraged to broaden the research experience of graduate students.

Areas of Specialization in Graduate Research

PhD and MS degrees are offered in Biology, and PhD and MS degrees are offered in Microbiology. General areas of research interests within these degrees include:

Cellular and Developmental Biology

Plant protoplast and tissue culture, transformation and regeneration; molecular biology and genetics of development and differentiation; nuclear organization; developmental neurobiology; cell surface interactions; physiology of photosynthesis.

Evolutionary Biology

Modern and classical approaches to plant and animal systematics and evolution; genomic and biochemical evolution; cytogenetics.

Molecular Biology

DNA and RNA isolation, cloning and sequencing; gene isolation, characterization, transfer and expression; bacterial and phage genetics; molecular processes of differentiation and embryogenesis; molecular microbiology and virology; genomics and informatics.

Organismal Biology

Comparative endocrinology and physiology; neurobiology; invertebrate ecology and ethology; marine biology; biological clocks.

Entrance Requirements

Coursework taken at the baccalaureate level normally must include mathematics through calculus, statistics, chemistry including organic chemistry, biochemistry, physics, genetics and adequate preparation in a biological science. Any remedial work will be in addition to the semester hours required for the degree. Graduate admissions decisions are based on students' academic record, research experience, letters of recommendation, GRE scores (verbal, quantitative and analytical) and suitability of students' research interests for programs in the department. For information about admissions, contact the Graduate Advisor, Department of Biology or visit us on the website at <http://www.bio.tamu.edu>.

Language Requirement

The Department of Biology has no foreign language requirement for any graduate degree program.

Faculty

Akinleye, Akintayo A, Lab Instructor
Biology
MD, Obafemi Awolowo University, Nigeria, 2011

Alexander, Michael B, Lab Instructor
Biology
PHD, Texas A&M University, 2014

Aramayo, Rodolfo A, Associate Professor
Biology
PHD, University of Georgia, 1992

Aufderheide, Karl J, Associate Professor
Biology
PHD, University of Minnesota, 1974

Bell-Pedersen, Deborah, Professor
Biology
PHD, State University of New York at Albany, 1991

Benedik, Michael J, Professor
Biology
PHD, Stanford University, 1982

Beremand, Phillip D, Lab Instructor
Biology
PHD, Indiana University- Bloomington, 1979

Bernardo, Joseph, Research Associate Professor
Biology
PHD, Duke University, 1991

Blackmon, Heath L, Assistant Professor
Biology
PHD, University of Texas at Arlington, 2015

Cohn, William B, Senior Lecturer
Biology
PHD, Texas A&M University, 2000

Criscione, Charles D, Associate Professor
Biology
PHD, Oregon State University, 2005

Delmore, Kira, Assistant Professor
Biology
PHD, University of British Columbia, 2015

Dulin, Jennifer N, Assistant Professor
Biology
PHD, University of Texas Health Science Center, 2012

Erickson, James W, Associate Professor
Biology
PHD, University of Wisconsin - madison, 1989

Garcia, Luis R, Professor
Biology
DDS, Texas A&M University Baylor College of Dentistry, 1999

Garcia, Luis R, Professor
Biology
PHD, University of Texas at Austin, 1996

Gomer, Richard H, Professor
Biology
PHD, California Institute of Technology, 1983

Greenbaum, Ira F, Professor
Biology
PHD, Texas Tech University, 1978

Griffing, Lawrence R, Associate Professor
Biology
PHD, Stanford University, 1981

Hardin, Paul E, University Distinguished Professor
Biology
PHD, Indiana University, 1987

Hawkins, Angela K, Lecturer
Biology
PHD, Texas A&M University, 2018

Jung, Jae Hoon, Research Assistant Professor
Biology
PHD, Stanford University, 2009

Kemp, Walter M, Professor
Biology
PHD, The Tulane University of Louisiana, 1969

Leboeuf, Brigitte L, Lecturer
Biology
PHD, Texas A&M University, 2009

Lockless, Steve W, Associate Professor
Biology
PHD, University of Texas at Dallas, 2002

Mackenzie, Duncan S, Associate Professor
Biology
PHD, University of California, Berkeley, 1980

Manson, Michael D, Professor
Biology
PHD, Stanford University, 1976

McCreedy, Dylan, Assistant Professor
Biology
PHD, Washington University, St. Louis, 2013

McKnight, Thomas D, Professor
Biology
PHD, University of Georgia, 1983

McMahan, Uel J, Professor
Biology
PHD, University of Tennessee, 1964

Menet, Jerome, Assistant Professor
Biology
PHD, Louis Pasteur University, 2003

Merlin, Christine, Assistant Professor
Biology
PHD, University Pierre and Marie Curie, 2006

Moyes, Rita J, Instructional Associate Professor
Biology
PHD, Texas A&M University, 1992

Nan, Beiyan, Assistant Professor
Biology
PHD, Peking University, 2007

Norton, Jerry D, Lab Instructor
Biology
PHD, The University of Texas at Austin, 1994

Pepper, Alan E, Associate Professor
Biology
PHD, University of California, Davis, 1990

Pilling, Darrell, Research Assistant Professor
Biology
PHD, University of Birmingham, 1995

Qin, Hongmin, Associate Professor
Biology
PHD, Institute of Microbiology, Chinese Academy of Sciences, 1999

Rao, Asha, Senior Lecturer
Biology
PHD, Texas A&M University, 2002

Riley, Bruce B, Professor
Biology
PHD, University of Wisconsin - madison, 1990

Rosenthal, Gil G, Professor
Biology
PHD, University of Texas at Austin, 2000

Ryan, Kathryn J, Instructional Assistant Professor
Biology
PHD, Baylor College of Medicine, 1998

Sachs, Matthew S, Professor
Biology
PHD, Massachusetts Institute of Technology, 1986

Schartl, Manfred, Visiting Professor
Biology
PHD, University of Gießen, 1980

Scott, Timothy P, Professor
Biology
PHD, Texas A&M University, 1996

Siegele, Deborah A, Associate Professor
Biology
PHD, University of Wisconsin - madison, 1989

Smith, James L, Associate Professor
Biology
PHD, University of Florida, 2002

Smotherman, Michael S, Professor
Biology
PHD, University of California, Los Angeles, 1998

Sorg, Joseph A, Associate Professor
Biology
PHD, University of Chicago, 2006

Tag, Andrew G, Senior Lecturer
Biology
PHD, Texas A&M University, 2003

Taylor, Lathrop, Senior Lecturer
Biology
PHD, Texas A&M University, 1985

Thomas, Terry L, Professor
Biology
PHD, The University of Georgia, 1975

Thompson, Wesley J, Professor
Biology
PHD, University of California-Berkeley, 1975

Versaw, Wayne K, Professor
Biology
PHD, University of Wisconsin - madison, 1995

Wicksten, Mary K, Professor
Biology
PHD, University of Southern California, 1977

Winemiller, Leslie K, Instructional Assistant Professor
Biology
PHD, University of Texas at Austin, 1989

Wooten, Leon, Lab Instructor
Biology
PHD, Texas A&M University, 1998

Wright, Rachel N, Lab Instructor
Biology
PHD, Texas A&M University, 2011

Zoran, Mark J, Professor
Biology
PHD, Iowa State University, 1987

Masters

- Master of Science in Biology (p. 1232)
- Master of Science in Microbiology (p. 1242)

Doctoral

- Doctor of Philosophy in Biology (p. 1236)
- Doctor of Philosophy in Microbiology (p. 1246)

Master of Science in Biology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1233)
- Degree Plan (p. 1233)
- Credit Requirements (p. 1234)
- Transfer of Credit (p. 1234)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1234)
- Thesis Option (p. 1234)
 - Thesis Proposal (p. 1235)
 - Final Examination/Thesis Defense (p. 1235)
- Non-Thesis Option (p. 1235)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University

campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final

Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at

the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional

Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within

a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours

of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1236)
- Continuous Registration (p. 1236)
- Time Limit (p. 1236)
- Foreign Languages (p. 1236)
- Application for Degree (p. 1236)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student’s advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student’s registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Biology

The PhD degree program in Biology is designed to provide the student with training in cellular, molecular and developmental and evolutionary biology, and to prepare the student for a leadership position in academic or industrial research. The Department of Biology offers a broad spectrum of research opportunities including plant molecular biology, molecular and cell biology of differentiation and development, gene structure and regulation in eukaryotic and prokaryotic organisms and their viruses, and cell structure and function. Students obtaining a degree in biology may also work closely with faculty in biochemistry, entomology, genetics, plant physiology, medicine and veterinary medicine.

Biology PhD students must demonstrate competence in their specific area of research and are expected to develop proficiency in four of the following seven areas at the time of the preliminary examination: biochemistry, cell biology, developmental biology, genetics, microbiology, computational/mathematical biology and molecular biology. An MS student must demonstrate competence in at least three of the above seven areas at the time of the final examination.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate’s grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master’s degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master’s degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
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| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | <p>Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).</p> <h2>Program Requirements</h2> <h3>Program Requirements</h3> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 1238) • Degree Plan (p. 1238) • Transfer of Credit (p. 1238) • Research Proposal (p. 1239) • Examinations (p. 1239) <ul style="list-style-type: none"> • Preliminary Examination (p. 1239) • Preliminary Examination Format (p. 1239) • Preliminary Examination Scheduling (p. 1239) • Report of Preliminary Examination (p. 1240) • Retake of Failed Preliminary Examination (p. 1240) • Final Examination (p. 1240) • Report of Final Examination (p. 1240) • Dissertation (p. 1241) | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit**. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1241)
- Time Limit (p. 1241)
- Continuous Registration (p. 1241)
- Admission to Candidacy (p. 1241)
- Languages (p. 1242)
- 99-Hour Cap on Doctoral Degree (p. 1242)
- Application for Degree (p. 1242)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

- met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Microbiology

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1243)
- Degree Plan (p. 1243)
- Credit Requirements (p. 1244)
- Transfer of Credit (p. 1244)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1244)
- Thesis Option (p. 1245)
 - Thesis Proposal (p. 1245)
 - Final Examination/Thesis Defense (p. 1245)
- Non-Thesis Option (p. 1245)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee.

The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree**

program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a**

graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is

currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1246)
- Continuous Registration (p. 1246)
- Time Limit (p. 1246)
- Foreign Languages (p. 1246)
- Application for Degree (p. 1246)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Microbiology

The PhD degree program in Microbiology is designed to provide the student with training in cellular, molecular and developmental and evolutionary biology, and to prepare the student for a leadership position in academic or industrial research. The Department of Biology offers a broad spectrum of research opportunities including plant molecular biology, molecular and cell biology of differentiation and development, gene structure and regulation in eukaryotic and prokaryotic organisms and their viruses, and cell structure and function. Students obtaining a degree in biology may also work closely with faculty in biochemistry, entomology, genetics, plant physiology, medicine and veterinary medicine.

Microbiology PhD students must demonstrate competence in their specific area of research and are expected to develop proficiency in four of the following seven areas at the time of the preliminary examination: biochemistry, cell biology, developmental biology, genetics, microbiology, computational/mathematical biology and molecular biology. An MS student must demonstrate competence in at least three of the above seven areas at the time of the final examination.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S.

DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1248)
- Degree Plan (p. 1248)
- Transfer of Credit (p. 1248)
- Research Proposal (p. 1249)
- Examinations (p. 1249)
 - Preliminary Examination (p. 1249)
 - Preliminary Examination Format (p. 1249)
 - Preliminary Examination Scheduling (p. 1249)

- Report of Preliminary Examination (p. 1250)
- Retake of Failed Preliminary Examination (p. 1250)
- Final Examination (p. 1250)
- Report of Final Examination (p. 1250)
- Dissertation (p. 1251)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with

the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for

coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.

- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee

members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate**. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1251)
- Time Limit (p. 1251)
- Continuous Registration (p. 1251)
- Admission to Candidacy (p. 1251)
- Languages (p. 1252)
- 99-Hour Cap on Doctoral Degree (p. 1252)
- Application for Degree (p. 1252)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic

year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Chemistry

<http://chem.tamu.edu>

Head: S. W. North

Graduate Advisor: Christian B. Hilty

The Department of Chemistry offers a program of study leading to a PhD degree in Chemistry.

The PhD degree curriculum in chemistry is designed to 1) provide students with an understanding of chemical principles 2) train students to become independent chemical researchers, 3) teach students how to effectively communicate the results of chemical research, and 4) prepare students to become professional chemists. Upon completion of the PhD program in chemistry students are qualified to obtain jobs as senior scientists in industrial and government labs or as postdoctoral researchers or junior faculty members at academic institutions.

The PhD degree program is designed to ensure that students receive extensive research experience. Opportunities for research are available to graduate students in all areas of modern chemistry including analytical, atmospheric, biological, catalysis, computational, energy, inorganic, materials, nuclear, organic, organometallic, physical and polymer chemistry. Students are trained in state-of-the-art instrumentation facilities, laboratories and shops. In addition to research, graduate students in the Department of Chemistry are required to enroll in chemistry coursework, serve as teaching assistants for at least two semesters, present and attend seminars, and pass a series of cumulative exams.

Chemistry graduate students are generally admitted into the PhD program. However, with approval, a student may pursue a research-based MS degree with thesis.

For further details about programs, faculty, facilities and financial assistance, write to the Graduate Advisor of the Department of Chemistry, or send an email message to gradmail@chem.tamu.edu. Additional information may be found on the departmental website at <http://chem.tamu.edu>.

Faculty

Banerjee, Sarbajit, Professor
Chemistry
PHD, State University of New York at Stony Brook, 2004

Barondeau, David P, Associate Professor
Chemistry
PHD, Texas A&M University, 1996

Batteas, James D, Professor
Chemistry
PHD, University of California, Berkeley, 1995

Begley, Tadhg P, University Distinguished Professor
Chemistry
PHD, California Institute of Technology, 1983

Bergbreiter, David E, Professor
Chemistry
PHD, Massachusetts Institute of Technology, 1974

Bethel, Ryan D, Lecturer
Chemistry
PHD, Texas A&M University, 2014

Bluemel, Janet F, Professor
Chemistry
PHD, Technical University of Munich, Germany, 1989

Brown, Lawrence S, Instructional Associate Professor
Chemistry
PHD, Princeton University, 1986

Burgess, Kevin, Professor
Chemistry
PHD, The University of Cambridge, 1983

Collins, Daniel P, Lecturer
Chemistry
PHD, University of South Carolina, 2012

Darensbourg, Donald J, University Distinguished Professor
Chemistry
PHD, University of Illinois at Urbana-Campaign, 1968

Darensbourg, Marcetta, University Distinguished Professor
Chemistry
PHD, University of Illinois at Urbana-Campaign, 1967

Dunbar, Kim R, University Distinguished Professor
Chemistry
PHD, Purdue University, 1984

Eller, Michael J, Research Assistant Professor
Chemistry
PHD, Texas A&M University, 2012

Fang, Lei, Assistant Professor
Chemistry
PHD, Northwestern University, 2010

Fierke, Carol A, Provost & Executive Vice President
Chemistry
PHD, Brandeis University, 1984

Folden III, Charles M, Associate Professor
Chemistry
PHD, University of California, Berkeley, 2004

Gabbai, Francois P, Professor
Chemistry
PHD, Technische Universitat Munchen, Germany, 1999

Gaede, Holly C, Instructional Associate Professor
Chemistry
PHD, University of California, Berkeley, 1995

Gladysz, John A, University Distinguished Professor
Chemistry
PHD, Stanford University, 1974

Goodey, Joanna R, Instructional Assistant Professor
Chemistry
PHD, University of Houston, 2001

Gopalakrishnan, Ganesa, Senior Lecturer
Chemistry
PHD, University of Madras, India, 1977

Hall, Michael B, Professor
Chemistry
PHD, University of Wisconsin - Madison, 1971

Hilty, Christian B, Professor
Chemistry
PHD, Swiss Federal Institute of Technology Zurich, 2004

Hughbanks, Timothy R, Professor
Chemistry
PHD, Cornell University, 1983

Laane, Jaan, Professor
Chemistry
PHD, Massachusetts Institute of Technology, 1967

Laganowsky, Arthur D, Assistant Professor
Chemistry
PHD, University of California, 2011

Lim, Soon Mi, Instructional Assistant Professor
Chemistry
PHD, Texas A&M University, 2006

Lindahl, Paul A, Professor
Chemistry
PHD, Massachusetts Institute of Technology, 1985

Liu, Wenshe, Professor
Chemistry
PHD, University of California, Davis, 2005

Mawk, Elmo J, Instructional Assistant Professor
Chemistry
PHD, Texas A&M University, 1999

McCartney, Stephanie A, Lecturer
Chemistry
PHD, George Washington University, 2009

Michaudel, Quentin, Assistant Professor
Chemistry
PHD, The Scripps Research Institute, 2015

Mullen, Christine A, Senior Lecturer
Chemistry
PHD, University of California, San Diego, 2000

Nippe, Michael, Assistant Professor
Chemistry
PHD, University of Wisconsin - Madison, 2011

North, Simon W, Professor
Chemistry
PHD, University of California, Berkeley, 1995

Ozerov, Oleg V, Professor
Chemistry
PHD, University of Kentucky, 2000

Pennington, James D, Instructional Associate Professor
Chemistry
PHD, University of Michigan, 1998

Ponnamperuma, Krishan, Senior Lecturer
Chemistry
PHD, University of Cambridge, UK, 1992

Powers, David C, Assistant Professor
Chemistry
PHD, Harvard University, 2012

Powers, Tamara M, Lecturer
Chemistry
PHD, Harvard University, 2013

Raushel, Frank M, University Distinguished Professor
Chemistry
PHD, University of Wisconsin - madison, 1976

Rosynek, Michael P, Professor
Chemistry
PHD, Rice University, 1972

Russell, David H, Professor
Chemistry
PHD, University of Nebraska - Lincoln, 1978

Saber, Mohamed, Lecturer
Chemistry
PHD, Texas A & M University, 2013

San Pedro, Joanna Maria N, Lecturer
Chemistry
PHD, Johns Hopkins University, 2014

Santander, Patricio J, Senior Lecturer
Chemistry
PHD, Texas A&M University, 1987

Schaefer, Amber J, Instructional Assistant Professor
Chemistry
PHD, Rice University, 2007

Schweikert, Emile A, Professor
Chemistry
PHD, Universite de Paris, France, 1964

Sczepanski, Jonathan T, Assistant Professor
Chemistry
PHD, The Johns Hopkins University, 2010

Serrano, Catherine M, Lecturer
Chemistry
PHD, University of Utah, 2015

Sheldon, Matthew T, Assistant Professor
Chemistry
PHD, University of California, Berkeley, 2010

Singleton, Daniel A, Professor
Chemistry
PHD, University of Minnesota, 1986

Son, Dong H, Professor
Chemistry
PHD, University of Texas at Austin, 2002

Waas, Jack R, Senior Lecturer
Chemistry
PHD, University of Michigan, 1997

Watanabe, Coran M, Associate Professor
Chemistry
PHD, John Hopkins University, 1999

Williamson, Vickie M, Instructional Professor
Chemistry
PHD, University of Oklahoma, 1992

Wooley, Karen L, University Distinguished Professor
Chemistry
PHD, Cornell University, 1993

Xu, Shiqing, Research Associate Professor
Chemistry
PHD, Fudan University, 2009

Yan, Xin, Assistant Professor
Chemistry
PHD, Purdue, 2015

Yennello, Sherry J, Professor
Chemistry
PHD, Indiana University, 1990

Zhou, Hongcai J, Professor
Chemistry
PHD, Texas A&M University, 2000

Masters

- Master of Science in Chemistry (p. 1254)

Doctoral

- Doctor of Philosophy in Chemistry (p. 1259)

Master of Science in Chemistry

Chemistry graduate students are generally admitted into the Ph.D. program. However, with approval, a student may pursue a research-based M.S. degree with thesis. In addition to research, these graduate students in the Department of Chemistry are required to enroll in chemistry coursework, serve as teaching assistants for at least two semesters, present seminars and attend seminars.

For further details about programs, faculty, facilities and financial assistance, write to the Graduate Advisor of the Department of Chemistry, or send an email message to gradmail@chem.tamu.edu. Additional

information may be found on the departmental website at <http://www.chem.tamu.edu/>.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1255)
- Degree Plan (p. 1256)
- Credit Requirements (p. 1256)
- Transfer of Credit (p. 1256)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1256)
- Thesis Option (p. 1257)
 - Thesis Proposal (p. 1257)
 - Final Examination/Thesis Defense (p. 1257)
- Non-Thesis Option (p. 1258)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department

(or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method,

significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must

be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student

should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1258)
- Continuous Registration (p. 1258)
- Time Limit (p. 1258)
- Foreign Languages (p. 1259)
- Application for Degree (p. 1259)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Chemistry

The Ph.D. degree program is designed to ensure that students receive extensive research experience. In addition to research, graduate students in the Department of Chemistry are required to enroll in chemistry coursework, serve as teaching assistants for at least two semesters, present seminars, attend seminars and pass a series of cumulative exams.

For further details about programs, faculty, facilities and financial assistance, write to the Graduate Advisor of the Department of Chemistry, or send an email message to gradmail@chem.tamu.edu. Additional information may be found on the departmental website at <http://www.chem.tamu.edu>.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1260)
- Degree Plan (p. 1260)
- Transfer of Credit (p. 1261)
- Research Proposal (p. 1261)
- Examinations (p. 1261)
 - Preliminary Examination (p. 1261)
 - Preliminary Examination Format (p. 1261)
 - Preliminary Examination Scheduling (p. 1262)
 - Report of Preliminary Examination (p. 1262)
 - Retake of Failed Preliminary Examination (p. 1262)
 - Final Examination (p. 1262)
 - Report of Final Examination (p. 1263)
- Dissertation (p. 1263)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1263)
- Time Limit (p. 1264)
- Continuous Registration (p. 1264)
- Admission to Candidacy (p. 1264)
- Languages (p. 1264)
- 99-Hour Cap on Doctoral Degree (p. 1264)
- Application for Degree (p. 1265)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Mathematics

www.math.tamu.edu

Head: E. Straube

The Department of Mathematics offers graduate studies leading to the MS and PhD degrees in mathematics. Many of the course offerings are also suitable for graduate students pursuing degrees in engineering, science, geosciences, business, economics and education.

At the MS level, a student can be enrolled either in the campus program or in the distance (or "on-line" program). For the distance MS program, three tracks are available: computational math, math teaching, and math leadership. For the campus MS program, five tracks are available: traditional (generally, preparation to continue with a PhD), math teaching, computational math, industrial math, and math biology. Students in the campus MS program can pursue either a thesis or non-thesis degree.

Satisfactory completion of the departmental qualifying exams is required of all students pursuing a PhD.

Admission to the Department's graduate programs is decided by the Graduate Programs Committee. Among the factors considered in admission decisions are: GRE General Test, undergraduate and graduate GPR, undergraduate academic background and achievement, letters of recommendation, GRE Subject Test in Mathematics (encouraged but not required).

Detailed information concerning programs and financial assistance may be obtained by writing the Graduate Programs Office, Department of Mathematics.

Faculty

Anshelevich, Michael V, Professor
Mathematics
PHD, University of California, Berkeley, 2000

Baskin, Dean R, Assistant Professor
Mathematics
PHD, Stanford University, 2010

Battle III, Guy A, Professor
Mathematics
PHD, Duke University, 1977

Baudier, Florent P, Instructional Assistant Professor
Mathematics
PHD, Universite De Besancon, 2010

Berkolaiko, Gregory, Professor
Mathematics
PHD, University of Bristol, 1997

Boas, Harold P, Professor
Mathematics
PHD, Massachusetts Institute of Technology, 1980

Bonito, Andrea, Professor
Mathematics
PHD, Ecole Polytechnique Federale de Lausanne, France, 2006

Borosh, Itshak, Senior Professor
Mathematics
PHD, Weizmann Institute of Science, 1966

Brannan, Michael P, Assistant Professor
Mathematics
PHD, Queen's University, 2012

Cai, Yue, Visiting Assistant Professor
Mathematics
PHD, University of Kentucky, 2016

Carter, Tamara A, Instructional Assistant Professor
Mathematics
PHD, Texas A&M University, 2005

Chen, Goong, Professor
Mathematics
PHD, University of Wisconsin - Madison, 1977

Comech, Andrew, Associate Professor
Mathematics
PHD, Columbia University, 1997

Daripa, Prabir, Professor
Mathematics
PHD, Brown University, 1985

Demlow, Alan R, Professor
Mathematics
PHD, Cornell University, 2002

Devore, Ronald A, University Distinguished Professor
Mathematics
PHD, Ohio State University, 1967

Dykema, Kenneth J, Professor
Mathematics
PHD, University of California, Berkeley, 1993

Efendiev, Yalchin R, Professor
Mathematics
PHD, California Institute of Technology, 1999

Epstein, Janice L, Instructional Associate Professor
Mathematics
PHD, Texas A&M University, 1992

Erdelyi, Tamas, Professor
Mathematics
PHD, University of Southern Carolina, 1989

Foucart, Simon, Associate Professor
Mathematics
PHD, University of Cambridge, 2005

Fulling, Stephen A, Professor
Mathematics
PHD, Princeton University, 1972

Gao, Li, Visiting Assistant Professor
Mathematics
PHD, University of Illinois, 2018
PHD, University of Illinois-Urbana-Champaign, 2018

Goswami, Souvik, Visiting Assistant Professor
Mathematics
PHD, University of Alberta, 2015

Grigorchuk, Rostislav, University Distinguished Professor
Mathematics
PHD, Moscow State University of Lomomosov, 1986

Guermond, Jean-Luc, Professor
Mathematics
PHD, Sorbonne Universites, 1995

Guo, Hao, Visiting Assistant Professor
Mathematics
PHD, The University of Adelaide, 2018

Gustafson, Robert A, Associate Professor
Mathematics
PHD, Yale University, 1979

Hanin, Boris L, Assistant Professor
Mathematics
PHD, Northwestern University, 2014

Harper, Alicia, Visiting Assistant Professor
Mathematics
PHD, Brown University, 2018

Hensley, Douglas A, Senior Professor
Mathematics
PHD, University of Minnesota, 1974

Hester, Yvette C, Instructional Associate Professor
Mathematics
PHD, Texas A&M University, 2000

Holmes, Irina, Assistant Professor
Mathematics
PHD, Louisiana State University, 2014

Howard, Peter B, Professor
Mathematics
PHD, Indiana University, 1998

Jantsch, Peter Alan, Visiting Assistant Professor
Mathematics
PHD, University of Tennessee, 2017

Johnson, Maya E, Lecturer
Mathematics
PHD, Texas A&M University, 2015

Johnson, William B, University Distinguished Professor
Mathematics
PHD, Iowa State University, 1969

Jung, Junehyuk, Assistant Professor
Mathematics
PHD, Princeton University, 2013

Kerr, David G, Professor
Mathematics
PHD, University of Toronto, 2001

Kim, Joung Dong, Instructional Assistant Professor
Mathematics
PHD, State University of New York at Stony Brook, 2012

Kuan, Jeffrey, Assistant Professor
Mathematics
PHD, Harvard University, 2015

Kuchment, Peter, University Distinguished Professor
Mathematics
PHD, Kharkov State University, Russia, 1973

Lahodny Jr, Glenn E, Instructional Assistant Professor
Mathematics
PHD, Texas Tech University, 2012

Landsberg, Joseph M, Professor
Mathematics
PHD, Duke University, 1990

Larson, David R, Professor
Mathematics
PHD, University of California - Berkeley, 1976

Lazarov, Raytcho D, Professor
Mathematics
PHD, University of Moscow, Russia, 1972

Lee, Sang Rae, Senior Lecturer
Mathematics
PHD, University of Oklahoma, 2012

Lewis, Jennifer L, Senior Lecturer
Mathematics
PHD, Ohio State University, 1980

Limaflho, Paulo C, Professor
Mathematics
PHD, State University of New York at Stony Brook, 1989

Liu, Chun-Hung, Assistant Professor
Mathematics
PHD, Georgia Institute of Technology, 2014

Lynch, Benjamin R, Senior Lecturer
Mathematics
PHD, University of Tennessee, 2010

Lynch, Richard G, Visiting Assistant Professor
Mathematics
PHD, University of Missouri, 2016

Maier, Matthias Sebastian, Assistant Professor
Mathematics
PHD, Ruprecht-Karls Universitat Heidelberg, Germany, 2015

Masri, Mohamad R, Associate Professor
Mathematics
PHD, University of Texas at Austin, 2005

Matusevich, Laura F, Professor
Mathematics
PHD, University of California, Berkeley, 2002

Narcowich, Francis J, Professor
Mathematics
PHD, Princeton University, 1972

Nekrashevych, Volodymyr, Professor
Mathematics
PHD, Taras Shevchenko National University, Russia, 1998

Onica, Constantin, Instructional Assistant Professor
Mathematics
PHD, Texas A&M University, 2005

Paouris, Grigorios, Professor
Mathematics
PHD, University of Crete, 2004

Papanikolas, Matthew A, Professor
Mathematics
PHD, Brown University, 1998

Pasciak, Joseph E, Professor
Mathematics
PHD, Cornell University, 1977

Pearlstein, Gregory J, Associate Professor
Mathematics
PHD, UNIVERSITY OF MASSACHUSETTS AT AMHERST, 1999

Pearlstein, Rosanna, Lecturer
Mathematics
PHD, University of Massachusetts Amherst, 1998

Petrova, Guergana P, Professor
Mathematics
PHD, University of Southern Carolina, 1999

Pisier, Gilles, University Distinguished Professor
Mathematics
PHD, University of Paris, 1977

Poltoratski, Alexei G, Professor
Mathematics
PHD, California Institute of Technology, 1995

Popov, Bojan D, Professor
Mathematics
PHD, University of Southern Carolina, 1999

Procaccia, Eviatar B, Assistant Professor
Mathematics
PHD, Weizmann Institute of Science, 2013

Rahm Jr, Robert S, Instructional Assistant Professor
Mathematics
PHD, Washington University in St. Louis, 2017

Reihani, Kamran, Instructional Assistant Professor
Mathematics
PHD, Tarbiat Modares University, 2005

Rojas, Joseph M, Professor
Mathematics
PHD, University of California, Berkeley, 1995

Roque-Sol, Marco A, Lecturer
Mathematics
PHD, Texas A&M University, 2006

Rowell, Eric C, Professor
Mathematics
PHD, University of California, San Diego, 2003

Rundell, William, Professor
Mathematics
PHD, Glasgow University, 1974

Schiellack Jr, Vincent, Associate Professor
Mathematics
PHD, University of Texas at Austin, 1982

Schlumprecht, Thomas B, Professor
Mathematics
PHD, Ludwig Maximilians Universitat, Germany, 1988

Sengupta, Sinjini, Senior Lecturer
Mathematics
PHD, Florida State University, 2006

Shatalov, Oksana, Instructional Associate Professor
Mathematics
PHD, Technion - Israel Institute of Technology, 2001

Shi, Shuhui, Visiting Assistant Professor
Mathematics
PHD, University of Rochester, 2018

Shiu, Anne J, Assistant Professor
Mathematics
PHD, University of California at Berkeley, 2010

Sivakumar, Natarajan, Associate Professor
Mathematics
PHD, University of Alberta, 1990

Smith, Roger R, Professor
Mathematics
PHD, University of Oxford, 1976

Sottile, Frank J, Professor
Mathematics
PHD, University of Chicago, 1994

Stiller, Peter F, Professor
Mathematics
PHD, Princeton University, 1977

Straube, Emil J, Professor
Mathematics
PHD, Swiss Federal Institute of Technology Zurich, 1983

Taliaferro, Steven D, Associate Professor
Mathematics
PHD, Stanford University, 1976

Tang, Xiaoxian, Visiting Assistant Professor
Mathematics
PHD, Peking University, Beijing, China, 2014

Titi, Edriss S, Professor
Mathematics
PHD, Indiana University, Bloomington, 1986

Tucker-Drob, Robin D, Assistant Professor
Mathematics
PHD, California Institute of Technology, 2013

Ventura, Emanuele, Visiting Assistant Professor
Mathematics
PHD, Aalto University, 2017

Volcic, Jurij, Visiting Assistant Professor
Mathematics
PHD, University of Auckland, 2018

Vorobets, Mariya, Instructional Assistant Professor
Mathematics
PHD, Lviv National University, 2004

Vorobets, Yaroslav, Associate Professor
Mathematics
PHD, Moscow Lomonosov State University, 1998

Ward, Joseph D, Professor
Mathematics
PHD, Indiana University, 1973

Whitfield, Jennifer G, Instructional Assistant Professor
Mathematics
PHD, Texas A&M University, 2017

Witherspoon, Sarah J, Professor
Mathematics
PHD, University of Chicago, 1994

Xie, Zhizhang, Associate Professor
Mathematics
PHD, The Ohio State University, 2011

Yan, Huafei, Professor
Mathematics
PHD, Massachusetts Institute of Technology, 1997

Yang, Tian, Assistant Professor
Mathematics
PHD, Rutgers University at New Brunswick, 2013
PHD, Rutgers, The State University of New Jersey, 2013

Yasskin, Philip B, Associate Professor
Mathematics
PHD, University of Maryland, 1979

Young, Matthew P, Professor
Mathematics
PHD, Rutgers University, 2004

Yu, Guoliang, Distinguished Professor
Mathematics
PHD, State University Of New York At Stony Brook, 1991

Yu, Shilin, Visiting Assistant Professor
Mathematics
PHD, Pennsylvania State University, 2013

Zelenko, Igor, Associate Professor
Mathematics
PHD, Technion - Israel Institute of Technology, 2002

Zhou, Jianxin, Professor
Mathematics
PHD, Pennsylvania State University, 1986

Masters

- Master of Science in Mathematics (p. 1268)
- Master of Science in Quantitative Finance (p. 1279)

Doctoral

- Doctor of Philosophy in Mathematics (p. 1273)

Master of Science in Mathematics

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdpss.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1269)
- Degree Plan (p. 1270)
- Credit Requirements (p. 1270)
- Transfer of Credit (p. 1270)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1270)
- Thesis Option (p. 1271)
 - Thesis Proposal (p. 1271)
 - Final Examination/Thesis Defense (p. 1271)
- Non-Thesis Option (p. 1272)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus Degree Program

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Distance Education Degree Program

The thesis option is not available for the distance education modality.

Transfer of Credit

On-Campus and Distance Education Degree Programs

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for

either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.

4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus Degree Program

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business

Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Distance Education Degree Program

The thesis option is not available for the distance education modality.

Thesis Proposal

On-Campus Degree Programs

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Distance Education Degree Program

The thesis option is not available for the distance education modality.

Final Examination/Thesis Defense

On-Campus Degree Programs

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Distance Education Degree Program

The thesis option is not available for the distance education modality.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1272)
- Continuous Registration (p. 1272)
- Time Limit (p. 1272)
- Foreign Languages (p. 1273)
- Application for Degree (p. 1273)

Residence

On-Campus Degree Program

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Distance Education Degree Program

The distance education modality does not have any residence requirement.

Continuous Registration

On-Campus and Distance Education Degree Programs

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education Degree Programs

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Mathematics

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1274)
- Degree Plan (p. 1274)
- Transfer of Credit (p. 1275)
- Research Proposal (p. 1275)
- Examinations (p. 1275)
 - Preliminary Examination (p. 1275)
 - Preliminary Examination Format (p. 1275)
 - Preliminary Examination Scheduling (p. 1276)
 - Report of Preliminary Examination (p. 1276)
 - Retake of Failed Preliminary Examination (p. 1276)
 - Final Examination (p. 1276)
 - Report of Final Examination (p. 1277)
- Dissertation (p. 1277)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1277)
- Time Limit (p. 1278)
- Continuous Registration (p. 1278)
- Admission to Candidacy (p. 1278)
- Languages (p. 1278)
- 99-Hour Cap on Doctoral Degree (p. 1278)
- Application for Degree (p. 1279)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Quantitative Finance

The Department of Mathematics offers a Master of Science in Quantitative Finance (MSQF). The MSQF has been developed as a collaboration between the Departments of Mathematics and Finance at Texas A&M University, and is intended to prepare students for employment opportunities in the financial sector that require superior quantitative skills. Students in this program will spend their first year further developing their quantitative skills with a set of carefully selected courses from the Department of Mathematics, and will spend their second year in the program applying their quantitative skills in a specially designed set of courses from the Department of Finance.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1279)
- Degree Plan (p. 1279)
- Credit Requirements (p. 1279)
- Transfer of Credit (p. 1280)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1280)
- Non-Thesis Option (p. 1280)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.

3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not

exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1281)
- Continuous Registration (p. 1281)
- Time Limit (p. 1281)
- Foreign Languages (p. 1281)
- Application for Degree (p. 1281)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Physics and Astronomy

<http://physics.tamu.edu>

Head: G. V. Rogachev

Graduate Advisors: J. Ross (Physics and Applied Physics); L. Macri (Astronomy)

The physics and astronomy curriculum provides classroom and research experience that prepares a graduate student for a career of either research and teaching at a university, or research and development at an industrial or government laboratory. The courses are well suited to graduate students in chemistry, mathematics, geosciences or engineering, as well as those seeking a graduate degree in physics or astronomy.

The faculty members of the department carry out theoretical and experimental research in the following areas: astronomy, atomic and molecular, computational physics, cosmology, high-energy, low-temperature/condensed matter, materials science, nuclear physics, and quantum optics. Laboratories supporting the experimental programs are well-equipped with modern research apparatus. Special support facilities include an astronomical instrumentation laboratory, access to high-performance computing, a variable-energy cyclotron, and many shared campus facilities.

Faculty

Abanov, Artem G, Associate Professor
Physics & Astronomy
PHD, Texas A&M University, 1998

Agnolet, Glenn, Professor
Physics & Astronomy
PHD, Cornell University, 1983

Akimov, Alexey, Assistant Professor
Physics & Astronomy
PHD, Moscow Institute of Technology, 2003

Allen, Roland E, Professor
Physics & Astronomy
PHD, University of Texas at Austin, 1969

Bassichis, William H, Professor
Physics & Astronomy
PHD, Case Western Reserve University, 1963

Becker, Katrin, Professor
Physics & Astronomy
PHD, University of Bonn, 1994

Becker, Melanie, Professor
Physics & Astronomy
PHD, University of Bonn, Germany, 1994

Belyanin, Alexey A, Professor
Physics & Astronomy
PHD, Institute of Applied Physics Russian Academy of Sciences, 1995

Chin, Siu A, Professor
Physics & Astronomy
PHD, Massachusetts Institute of Technology, 1975

Christian, Gregory A, Assistant Professor
Physics & Astronomy
PHD, Michigan State University, 2011

Depoy, Darren L, Professor
Physics & Astronomy
PHD, University of Hawaii at Manoa, 1987

Dutta, Bhaskar, Professor
Physics & Astronomy
PHD, Oklahoma State University, 1995

Erukhimova, Tatiana L, Instructional Associate Professor
Physics & Astronomy
PHD, Institute of Applied Physics, Russian Academy of Sciences, 1999

Eusebi, Ricardo, Associate Professor
Physics & Astronomy
PHD, University of Rochester, 2006

Finkelstein, Alexander, Professor
Physics & Astronomy
PHD, Lauda Institute for Theoretical Physics, 1972

Ford, Albert L, Professor
Physics & Astronomy
PHD, University of Texas at Austin, 1972

Fries, Rainer J, Associate Professor
Physics & Astronomy
PHD, University of Regensburg, Germany, 2001

Fry, Edward S, University Distinguished Professor
Physics & Astronomy
PHD, University of Michigan, 1969

Gagliardi, Carl A, Professor
Physics & Astronomy
PHD, Princeton University, 1982

Holt, Jeremy W, Assistant Professor
Physics & Astronomy
PHD, Stony Brook University, 2008

Kamon, Teruki, Professor
Physics & Astronomy
PHD, University of Tsukuba, 1986

Katzgraber, Helmut G, Professor
Physics & Astronomy
PHD, University of California-Santa Cruz, 2001

Kennicutt, Robert Charles, Professor
Physics & Astronomy
PHD, University of Washington, 1978

Ko, Che-Ming, Distinguished Professor
Physics & Astronomy
PHD, State University of New York at Stony Brook, 1973

Kocharovskaya, Olga A, University Distinguished Professor
Physics & Astronomy
PHD, Institute of Applied Physics, Russian Academy of Sciences, 1986

Kocharovsky, Vitaly V, Professor
Physics & Astronomy
PHD, Institute of Applied Physics, Russian Academy of Sciences, 1986

Krisciunas, Kevin L, Instructional Assistant Professor
Physics & Astronomy
PHD, University of Washington, 2000

Lee, David M, Distinguished Professor
Physics & Astronomy
PHD, Yale University, 1959

Lyuksyutov, Igor F, Professor
Physics & Astronomy
PHD, Highest Attestation Commission at Ministry of Education and Science of Russian Federation, 1990

Macri, Lucas M, Professor
Physics & Astronomy
PHD, Harvard University, 2001

Mahapatra, Rupak K, Professor
Physics & Astronomy
PHD, University of Minnesota, 2000

Marshall, Jennifer L, Assistant Professor
Physics & Astronomy
PHD, Ohio State University, 2006

Mason, John D, Instructional Assistant Professor
Physics & Astronomy
PHD, Texas A&M University, 2016

McIntyre, Peter M, Professor
Physics & Astronomy
PHD, University of Chicago, 1973

Melconian, Daniel G, Associate Professor
Physics & Astronomy
PHD, Simon Fraser University, 2006

Mioduszewski, Saskia, Professor
Physics & Astronomy
PHD, University of Tennessee, 1999

Mirabolfathi, Nader, Research Associate Professor
Physics & Astronomy
PHD, University of Paris XI, 2002

Naugle, Donald G, Professor
Physics & Astronomy
PHD, Texas A&M University, 1965

Papovich, Casey J, Professor
Physics & Astronomy
PHD, Johns Hopkins University, 2002

Pokrovsky, Valery, University Distinguished Professor
Physics & Astronomy
PHD, Tomsk State University, 1957

Pope, Christopher N, University Distinguished Professor
Physics & Astronomy
PHD, University of Cambridge, 1980

Rapp, Ralf F, Professor
Physics & Astronomy
PHD, Rheinische Friedrich-Wilhelma University, Bonn, 1996

Rogachev, Grigory V, Professor and Head
Physics & Astronomy
PHD, National Research Centre, 1999

Ross Jr, Joseph H, Professor
Physics & Astronomy
PHD, University of Illinois at Urbana-Champaign, 1986

Safonov, Alexei N, Professor
Physics & Astronomy
PHD, University of Florida, 2001

Saslow, Wayne M, Professor
Physics & Astronomy
PHD, University of California - Irvine, 1968

Schuessler, Hans A, Professor
Physics & Astronomy
DOC, Universitat Heidelberg, 1964

Scully, Marlan O, University Distinguished Professor
Physics & Astronomy
PHD, Yale University, 1966

Sezgin, Ergin, Professor
Physics & Astronomy
PHD, State University of New York at Stony Brook, 1980

Sokolov, Alexei V, Professor
Physics & Astronomy
PHD, Stanford University, 2001

Strigari, Louis E, Assistant Professor
Physics & Astronomy
PHD, Ohio State University, 2005

Suntzeff, Nicholas B, University Distinguished Professor
Physics & Astronomy
PHD, University of California - Santa Cruz, 1980

Teizer, Winfried, Professor
Physics & Astronomy
PHD, University of Massachusetts - Amherst, 1998

Toback, David, Professor
Physics & Astronomy
PHD, University of Chicago, 1997

Tran, Kim-Vy H, Professor
Physics & Astronomy
PHD, University of California, Santa Cruz, 2002

Tribble, Robert E, University Distinguished Professor
Physics & Astronomy
PHD, Princeton University, 1973

Walsh, Jonelle L, Assistant Professor
Physics & Astronomy
PHD, University of California, Irvine, 2011

Wang, Lifan, Professor
Physics & Astronomy
PHD, University of Science and Technology of China, 1993

Webb, Robert C, Professor
Physics & Astronomy
PHD, Princeton University, 1972

Weimer, Michael B, Professor
Physics & Astronomy
PHD, California Institute of Technology, 1986

Welch, George R, Professor
Physics & Astronomy
PHD, Massachusetts Institute of Technology, 1989

Wu, Wenhao, Associate Professor
Physics & Astronomy
PHD, University of Chicago, 1992

Zheltikov, Alexey M, Professor
Physics & Astronomy
PHD, M.V. Lomonosov Moscow State University, 1990

Zubairy, Muhammad S, University Distinguished Professor
Physics & Astronomy
PHD, University of Rochester, 1979

Masters

- Master of Science in Astronomy (p. 1289)
- Master of Science in Physics (p. 1299)

Doctoral

- Doctor of Philosophy in Applied Physics (p. 1283)
- Doctor of Philosophy in Astronomy (p. 1294)
- Doctor of Philosophy in Physics (p. 1304)

Doctor of Philosophy in Applied Physics

The Applied Physics program offers students the opportunity to receive a PhD while focusing on areas of research outside of those covered by the traditional fundamental physics program. The interdisciplinary curriculum for this degree includes a core of foundation physics courses plus a selection of graduate courses in associated science and engineering fields relevant to a particular student's area of research specialization.

PHYS 601, PHYS 603, PHYS 606, PHYS 607, PHYS 615, one graduate-level course in Classical or Quantum Physics (see graduate advisor for options) and four elective courses, chosen in consultation with the student's committee, with the exceptions of PHYS 666, undergraduate courses and PHYS 685, are required to complete the PhD in Applied Physics.

As part of the training of the graduate student pursuing the MS or PhD in Physics or Applied Physics, the Department of Physics and Astronomy recommends that all students serve as teaching assistants for at least two semesters.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

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|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1285)
- Degree Plan (p. 1285)
- Transfer of Credit (p. 1286)
- Research Proposal (p. 1286)
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 - Final Examination (p. 1287)
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- Dissertation (p. 1288)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1288)
- Time Limit (p. 1289)
- Continuous Registration (p. 1289)
- Admission to Candidacy (p. 1289)
- Languages (p. 1289)
- 99-Hour Cap on Doctoral Degree (p. 1289)
- Application for Degree (p. 1289)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Astronomy

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

1. Meet with departmental graduate advisor to plan course of study for first semester. **When:** Before first semester registration. **Approved by:** Graduate advisor or chair of the intercollegiate faculty.

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| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | ASTR 601/PHYS 641, ASTR 602/PHYS 642, ASTR 603/PHYS 643, ASTR 604/PHYS 644, ASTR 605/PHYS 645 and ASTR 606/PHYS 646, as well as PHYS 615 and one of the following: PHYS 601, PHYS 603, PHYS 606 or PHYS 607 are required to complete the Master's degree in Astronomy. | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | <h2>Program Requirements</h2> <ul style="list-style-type: none"> • Student's Advisory Committee (p. 1290) • Degree Plan (p. 1291) • Credit Requirements (p. 1291) • Transfer of Credit (p. 1291) • Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1291) • Thesis Option (p. 1292) <ul style="list-style-type: none"> • Thesis Proposal (p. 1292) • Final Examination/Thesis Defense (p. 1292) • Non-Thesis Option (p. 1293) | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | <h2>Student's Advisory Committee</h2> <p>After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of no fewer than three members of the graduate faculty, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student's major department. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.</p> <p>The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the</p> | | |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. | | | |

committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.

- Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
 3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
 4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
 5. A maximum of 2 hours of Seminar (681).
 6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
 7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
 8. Continuing education courses may not be used for graduate credit.
 9. Extension courses are not acceptable for credit.
 10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
 11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may

be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the

individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1293)
- Continuous Registration (p. 1293)
- Time Limit (p. 1293)
- Foreign Languages (p. 1293)
- Application for Degree (p. 1294)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Astronomy

The Doctor of Philosophy (PhD) in Astronomy provides students the opportunity to perform forefront astronomical research while specializing in either Astrophysics or Astrostatistics. In both cases, the degree will include six core astronomy courses: ASTR 601/PHYS 641, ASTR 602/PHYS 642, ASTR 603/PHYS 643, ASTR 604/PHYS 644, ASTR 605/PHYS 645 and ASTR 606/PHYS 646. In addition to the six core courses, students specializing in Astrophysics will also take PHYS 615 and one of the following: PHYS 601, PHYS 603, PHYS 606 or PHYS 607. In addition to the six core classes, students specializing in Astrostatistics will take STAT 630 and one of the following: STAT 624, STAT 636, STAT 638, STAT 639 or STAT 654.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

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| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |

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| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |

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| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1295)
- Degree Plan (p. 1295)
- Transfer of Credit (p. 1296)
- Research Proposal (p. 1296)
- Examinations (p. 1296)
 - Preliminary Examination (p. 1296)
 - Preliminary Examination Format (p. 1296)
 - Preliminary Examination Scheduling (p. 1297)
 - Report of Preliminary Examination (p. 1297)
 - Retake of Failed Preliminary Examination (p. 1297)
 - Final Examination (p. 1297)
 - Report of Final Examination (p. 1298)
- Dissertation (p. 1298)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of

Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional

Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1298)
- Time Limit (p. 1299)
- Continuous Registration (p. 1299)
- Admission to Candidacy (p. 1299)
- Languages (p. 1299)
- 99-Hour Cap on Doctoral Degree (p. 1299)
- Application for Degree (p. 1299)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Physics

The Physics Master of Science (MS) degree offers students a foundation in either fundamental or applied physics, together with experience in forefront research. The student will take a suite of core Physics graduate courses. For students focused on areas of fundamental physics, these will include PHYS 601, PHYS 603, PHYS 606, PHYS 607, and PHYS 615.

For students focused on areas of applied physics, these will include PHYS 606, PHYS 615, any two of PHYS 601, PHYS 603, or PHYS 607, plus an additional course other than PHYS 666 chosen in consultation with the student's committee. In either case, the student will also perform research in the area of the thesis. A non-thesis option is also offered.

As part of the training of the graduate student pursuing an MS or PhD, the Department of Physics and Astronomy recommends that all students serve as teaching assistants for at least two semesters.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1300)
- Degree Plan (p. 1301)
- Credit Requirements (p. 1301)
- Transfer of Credit (p. 1301)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1301)
- Thesis Option (p. 1302)
 - Thesis Proposal (p. 1302)
 - Final Examination/Thesis Defense (p. 1302)
- Non-Thesis Option (p. 1303)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department

(or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method,

significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must

be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student

should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1303)
- Continuous Registration (p. 1303)
- Time Limit (p. 1303)
- Foreign Languages (p. 1304)
- Application for Degree (p. 1304)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Physics

Courses PHYS 601, PHYS 603, PHYS 606, PHYS 607, PHYS 611, PHYS 615, and PHYS 624 and two graduate courses chosen from three distribution electives: high energy/nuclear, atomic and molecular optics/condensed matter and/or astronomy are required for the degree of Doctor of Philosophy. More advanced courses in a number of specialized fields are available for candidates for the PhD degree.

As part of the training of the graduate student pursuing an MS or PhD, the Department of Physics and Astronomy recommends that all students serve as teaching assistants for at least two semesters.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

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| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1305)
- Degree Plan (p. 1305)
- Transfer of Credit (p. 1306)
- Research Proposal (p. 1306)
- Examinations (p. 1306)
 - Preliminary Examination (p. 1306)
 - Preliminary Examination Format (p. 1306)
 - Preliminary Examination Scheduling (p. 1307)
 - Report of Preliminary Examination (p. 1307)
 - Retake of Failed Preliminary Examination (p. 1307)
 - Final Examination (p. 1307)
 - Report of Final Examination (p. 1308)
- Dissertation (p. 1308)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional**

Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for

credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;

- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693,

695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must

be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1308)
- Time Limit (p. 1309)
- Continuous Registration (p. 1309)
- Admission to Candidacy (p. 1309)
- Languages (p. 1309)
- 99-Hour Cap on Doctoral Degree (p. 1309)
- Application for Degree (p. 1310)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to

the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,

5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health

- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Statistics

www.stat.tamu.edu

Head: V. Johnson

The Department of Statistics offers a graduate program leading to the degrees of Master of Science or Doctor of Philosophy.

The Master of Science degree may be obtained through a conventional on-campus degree or via Online Learning.

Faculty

Akleman, Derya G, Instructional Associate Professor
Statistics
PHD, Texas A&M University, 1996

Bhattacharya, Anirban, Associate Professor
Statistics
PHD, Duke University, 2012

Carroll, Raymond J, Distinguished Professor
Statistics
PHD, Purdue University, 1974

Chen, Willa W, Professor
Statistics
PHD, New York University, 2000

Cline, Daren B, Professor
Statistics
PHD, Colorado State University, 1983

Dabney, Alan R, Associate Professor
Statistics
PHD, University of Washington, 2006

Garcia, Tanya, Associate Professor
Statistics
PHD, Texas A&M University, 2011

Gaynanova, Irina, Assistant Professor
Statistics
PHD, Cornell University, 2015

Hart, Jeffrey D, Professor
Statistics
PHD, Southern Methodist University, 1981

Huang, Jianhua, Professor
Statistics
PHD, University of California, Berkeley, 1997

Johnson, Valen E, Distinguished Professor
Statistics
PHD, University Of Chicago, 1989

Jones, David Edward, Assistant Professor
Statistics
PHD, Harvard, 2016

Jones, Edward R, Executive Professor
Statistics
PHD, Virginia Tech, 1976

Jun, Mikyoung, Professor
Statistics
PHD, University of Chicago, 2005

Karmakar, Moumita, Instructional Assistant Professor
Statistics
PHD, University of Maryland at Baltimore, 2015
PHD, University of Maryland Baltimore County, 2015

Katzfuss, Matthias S, Associate Professor
Statistics
PHD, The Ohio State University, 2011

Kolodziej, Elizabeth Y, Instructional Assistant Professor
Statistics
PHD, Texas A&M University, 2010

Liang, Hwa Chi, Instructional Assistant Professor
Statistics
PHD, University of New Mexico, 2003

Longnecker, Michael T, Professor
Statistics
PHD, Florida State University, 1976

Mallick, Bani K, University Distinguished Professor
Statistics
PHD, University of Connecticut, 1994

Newton, Howard J, Senior Professor
Statistics
PHD, SUNY Buffalo, 1975

Ni, Yang, Assistant Professor
Statistics
PHD, Rice University, 2015

Pati, Debdeep, Associate Professor
Statistics
PHD, Duke University, 2012

Pourahmadi, Mohsen, Professor
Statistics
PHD, Michigan State University, 1980

Rahman, Shahina, Instructional Assistant Professor
Statistics
PHD, Texas A&M University, 2015

Sang, Huiyan, Associate Professor
Statistics
PHD, Duke University, 2008

Schmiediche, Henrik, Instructional Associate Professor
Statistics
PHD, Texas A&M University, 1993

Sinha, Samiran, Professor
Statistics
PHD, University of Florida, 2004

Spiegelman, Clifford H, University Distinguished Professor
Statistics
PHD, Northwestern University, 1976

Subbarao, Suhasini T, Professor
Statistics
PHD, University of Bristol, 2001

Wang, Suojin, Professor
Statistics
PHD, University of Texas at Austin, 1988

Wehrly, Thomas E, Senior Professor
Statistics
PHD, University of Wisconsin - Madison, 1976

Wong, Ka Wai, Assistant Professor
Statistics
PHD, University California, Davis, 2014

Zhang, Xianyang, Assistant Professor
Statistics
PHD, University of Illinois at Urbana - Champaign, 2013

Zhou, Lan, Associate Professor
Statistics
PHD, University of California, Berkeley, 1997

Masters

- Master of Science in Statistics (p. 1311)

Doctoral

- Doctor of Philosophy in Statistics (p. 1315)

Certificates

- Applied Statistics Certificate (p. 1321)

Master of Science in Statistics

The Master of Science in Statistics offers two options in its degree programs:

1. the MS (thesis option), which requires the preparation of a thesis and,
2. the MS (non-thesis option), which requires more formal coursework in lieu of the thesis.

Both programs provide a balanced training in statistical methods and statistical theory and are intended to prepare the student to adapt statistical methodologies to practical problems.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1312)
- Degree Plan (p. 1312)
- Credit Requirements (p. 1313)
- Transfer of Credit (p. 1313)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1313)
- Thesis Option (p. 1313)
 - Thesis Proposal (p. 1314)
 - Final Examination/Thesis Defense (p. 1314)
- Non-Thesis Option (p. 1314)

Student's Advisory Committee

On-Campus and Distance Education

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve.

Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

The distance education modality requires an advisory committee to be comprised by the designated coordinator of the distance education in the Department of Statistics and the Department Head of the Department of Statistics.

Degree Plan

On-Campus and Distance Education

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

On-Campus and Distance Education

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

On-Campus and Distance Education

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

On-Campus and Distance Education

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

On-Campus and Distance Education

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all**

courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

On-Campus and Distance Education

For non-thesis option students, a final comprehensive examination is not required.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1315)
- Continuous Registration (p. 1315)
- Time Limit (p. 1315)
- Foreign Languages (p. 1315)
- Application for Degree (p. 1315)

Residence

On-Campus

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

Distance Education

The Distance Education modality does not have any residence requirements.

See Residence Requirements (p. 21).

Continuous Registration

On-Campus and Distance Education

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

On-Campus and Distance Education

No specific language requirement exists for the Master of Science degree.

Application for Degree

On-Campus and Distance Education

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Statistics

The aim of the PhD program is to provide comprehensive and balanced training in statistical methods and statistical theory. Particular emphasis will be placed on training students to independently recognize the relevance of statistical methods to the solution of specific problems and to enable them to develop new methods when they are needed. The training will also aim at conveying a sound knowledge of existing statistical theory, including the mathematical facility to develop new results in statistical methodology. At the same time, the program will be kept sufficiently flexible to permit students to develop their specific interests.

The following courses are offered on an irregular basis:

| Code | Title | Semester Credit Hours |
|----------|-----------------------------------|-----------------------|
| STAT 623 | Statistical Methods for Chemistry | 3 |
| STAT 658 | Transportation Statistics | 3 |

Contact the department for specific offerings for any given term.

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | | | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1317)
- Degree Plan (p. 1317)
- Transfer of Credit (p. 1317)
- Research Proposal (p. 1318)
- Examinations (p. 1318)
 - Preliminary Examination (p. 1318)
 - Preliminary Examination Format (p. 1318)
 - Preliminary Examination Scheduling (p. 1318)
 - Report of Preliminary Examination (p. 1319)
 - Retake of Failed Preliminary Examination (p. 1319)
 - Final Examination (p. 1319)
 - Report of Final Examination (p. 1320)
- Dissertation (p. 1320)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1320)
- Time Limit (p. 1320)

- Continuous Registration (p. 1320)
- Admission to Candidacy (p. 1321)
- Languages (p. 1321)
- 99-Hour Cap on Doctoral Degree (p. 1321)
- Application for Degree (p. 1321)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Applied Statistics - Certificate

The Department of Statistics at Texas A&M University offers a certificate in Applied Statistics. This certificate meets the requirements of the University and the Texas Higher Education Coordinating Board (Chapter 5, 5.48). This certificate is 12 semester credit hours and is designed to meet the needs of students and the workforce. This online program is an integrated extension of the renowned on-campus program in that on-campus and distance students are enrolled in the exact same classes. The students must:

1. Be admitted to the university,
2. Take 12 semester credit hours from the list of graduate courses below,
3. Have at least a 3.00 GPA for the 12 statistic certificate hours, as well as at least an overall 3.00 GPA for all courses taken at Texas A&M,
4. Must prepare a 5-10 page document describing a statistical analysis of a data set which shows the application of statistics procedures which were learned in one or more of the statistics courses taken as part of the certificate program. It should contain the following:
 - a. Description of the research goal or purposes of the study generating the data set.
 - b. Detailed discussion of the data set and include data set in appendix to the document.
 - c. Describe the statistical methodology used to analyze the data set.
 - d. Detailed analysis of the data set, including tests of hypotheses, confidence intervals, graphs, tables, etc.
 - e. Discussion of the analysis with detailed conclusions concerning the degree to which the data supports the research hypotheses.
5. Document described above must be sent to the Associate Department Head for Statistics at least 60 days prior to the proposed graduation date. Currently, that is Dr. Michael Longnecker, longneck@stat.tamu.edu.
6. Each certificate, no matter the specialty, will be listed as Applied Statistics on the certificate which students will apply for and which will be mailed out from Texas A&M University.

Program Requirements

| Code | Title | Semester Credit Hours |
|-------------------------------|--------------------------------------------------------|-----------------------|
| Select four of the following: | | 12 |
| STAT 601 | Statistical Analysis | |
| STAT 604 | Topics in Statistical Computations | |
| STAT 607 | Sampling | |
| STAT 608 | Regression Analysis | |
| STAT 626 | Methods in Time Series Analysis | |
| STAT 631 | Statistical Methods in Finance | |
| STAT 636 | Applied Multivariate Analysis and Statistical Learning | |
| STAT 638 | Introduction to Applied Bayesian Methods | |
| STAT 642 | The Methods of Statistics II | |
| STAT 645 | Applied Biostatistics and Data Analysis | |
| STAT 646 | Statistical Bioinformatics | |
| STAT 647 | Spatial Statistics | |
| STAT 651 | Statistics in Research I | |
| STAT 652 | Statistics in Research II | |
| STAT 653 | Statistics in Research III | |
| STAT 656 | Applied Analytics Using SAS Enterprise Miner | |
| STAT 657 | Advanced Programming Using SAS | |
| STAT 659 | Applied Categorical Data Analysis | |
| Total Semester Credit Hours | | 12 |

¹ Students must have a 3.00 GPA over the four courses in order to receive the statistics certificate.

College of Veterinary Medicine and Biomedical Sciences

<http://vetmed.tamu.edu>

Administrative Officers

Dean - Eleanor M. Green, D.V.M.

Executive Associate Dean - Kenita S. Rogers, D.V.M., M.S.

Associate Dean for Professional Programs - Karen K. Cornell, D.V.M., Ph.D.

Associate Dean for Research and Graduate Studies - Robert C. Burghardt, Ph.D.

Associate Dean for Undergraduate Education - Elizabeth Crouch, Ph.D.

Assistant Dean for Finance - Belinda S. Hale, M.B.A.

Departments

Departments

Department of Veterinary Integrative Biosciences (p. 1339)

Department of Veterinary Large Animal Clinical Sciences (p. 1346)

Department of Veterinary Pathobiology (p. 1348)

Department of Veterinary Physiology and Pharmacology (p. 1350)

Department of Veterinary Small Animal Clinical Sciences (p. 1351)

Interdepartmental Programs

- Doctor of Philosophy in Biomedical Sciences (p. 1327)
- Master of Science in Biomedical Sciences (p. 1322)
- Master of Science in Science Technology Journalism (p. 1333)

First Professional Doctoral

- Doctor of Veterinary Medicine in Veterinary Medicine (p. 1337)

Interdepartmental Degree Programs

Masters

- Master of Science in Biomedical Sciences (p. 1322)
- Master of Science in Science and Technology Journalism (p. 1333)

Doctoral

- Doctor of Philosophy in Biomedical Sciences (p. 1327)

First Professional Doctoral

- Doctor of Veterinary Medicine in Veterinary Medicine (p. 1337)

Master of Science in Biomedical Sciences

The Biomedical Sciences (BIMS) Graduate Program is an interdepartmental program of study awarding a Master of Science (MS) and Doctor of Philosophy (PhD) through each of the five academic departments (p. 1322) within the College of Veterinary Medicine & Biomedical Sciences. Focusing on cross-disciplinary education and training in the biomedical sciences and the numerous associated domains of research, the faculty teach and mentor students in fields that have a critical mass of faculty, exceptional productivity, and international recognition. These areas of research strength include:

- Biomedical Genomics and Bioinformatics
- Diagnostics and Therapeutics
- Infection, Immunity, and Epidemiology
- Physiology and Developmental Biology

There are two MS options available from which a student may choose, the thesis concentration and the non-thesis concentration. The **Master of Science in Biomedical Sciences with a Thesis concentration** provides an academic and research experience that educates students within the context of cross-disciplinary knowledge and prepares students to excel in a research career in areas as diverse as academia, government, industry, and others. Additionally, a **Master of Science in Biomedical Sciences with a Non-Thesis concentration** has a curriculum designed for students who wish to gain academic preparation beyond the undergraduate degree before entering a professional program of study or employment in healthcare.

Additional details, including information about the admissions process, can be found at <http://vetmed.tamu.edu/graduate/biomedical-sciences>.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. | 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1323)
- Degree Plan (p. 1324)
- Credit Requirements (p. 1324)
- Transfer of Credit (p. 1324)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1324)
- Thesis Option (p. 1325)
 - Thesis Proposal (p. 1325)
 - Final Examination/Thesis Defense (p. 1325)
- Non-Thesis Option (p. 1326)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department

(or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method,

significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must

be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student

should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1326)
- Continuous Registration (p. 1326)
- Time Limit (p. 1326)
- Foreign Languages (p. 1327)
- Application for Degree (p. 1327)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Biomedical Sciences

The Biomedical Sciences Graduate Program is an interdepartmental program of study awarding a Master of Science (MS) and Doctor of Philosophy (PhD) through each of the five academic departments (p. 1322) within the College of Veterinary Medicine & Biomedical Sciences. Focusing on cross-disciplinary education in the biomedical sciences and the numerous associated domains of research, the faculty teach and mentor students in fields that have a critical mass of faculty, exceptional productivity, and international recognition. Examples of these areas of strength include:

Biomedical Genomics and Bioinformatics
Diagnostics and Therapeutics
Infection, Immunity, and Epidemiology
Physiology and Developmental Biology

A PhD in Biomedical Sciences provides an academic and research experience that educates students within the context of cross-disciplinary knowledge and prepares students to excel in a research career in areas as diverse as academia, government, industry, and others. Additional details, including information about the admissions process, can be found at <http://vetmed.tamu.edu/graduate>. A set of general characteristics of former students of the PhD program in biomedical sciences can be accessed through the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu/Prospective-Students/Programs-and-Degrees/18-Characteristics-of-the-Doctoral-Programs/#0-CollegeofVeterinaryMedicine>).

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |

| | | |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1328)
- Degree Plan (p. 1329)
- Transfer of Credit (p. 1329)
- Research Proposal (p. 1329)
- Examinations (p. 1329)
 - Preliminary Examination (p. 1329)
 - Preliminary Examination Format (p. 1330)
 - Preliminary Examination Scheduling (p. 1330)
 - Report of Preliminary Examination (p. 1330)
 - Retake of Failed Preliminary Examination (p. 1330)
 - Final Examination (p. 1331)
 - Report of Final Examination (p. 1331)
- Dissertation (p. 1331)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a. a mastery of the subject matter of all fields in the program;
- b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- c. forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1332)
- Time Limit (p. 1332)

- Continuous Registration (p. 1332)
- Admission to Candidacy (p. 1332)
- Languages (p. 1332)
- 99-Hour Cap on Doctoral Degree (p. 1332)
- Application for Degree (p. 1333)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Science and Technology Journalism

The Master of Science in Science and Technology Journalism is a distinctive program to prepare students for careers as science and technology writers, reporters and editors in the public media, government, industry, academia and other sectors. It also can serve as a foundation for doctoral study.

The core courses for the Master of Science in Science and Technology Journalism are as follows: VIBS 657; VIBS 658; VIBS 660; and 3 credit hours of VIBS 685 (Science Editing).

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1334)
- Degree Plan (p. 1334)
- Credit Requirements (p. 1334)
- Transfer of Credit (p. 1334)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1335)
- Thesis Option (p. 1335)
 - Thesis Proposal (p. 1336)
 - Final Examination/Thesis Defense (p. 1336)
- Non-Thesis Option (p. 1336)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 5V98, 5V99, 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed,

the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or SOPH 680 may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.

5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English Language Proficiency requirements must be satisfied prior to scheduling the examination. If applicable, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. Examinations which are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement

provided there is consistency within all degree programs within a department or interdisciplinary degree program.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 5V98, 5V99, or 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1336)
- Continuous Registration (p. 1337)
- Time Limit (p. 1337)
- Foreign Languages (p. 1337)
- Application for Degree (p. 1337)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such

a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Veterinary Medicine in Veterinary Medicine

Professional Curriculum in Veterinary Medicine

The professional curriculum seeks to deliver to the veterinary medical profession a student fully prepared to begin a medical career in the arts and sciences of animal health and disease. Emphasis on professional specialization is reserved for graduate programs.

Veterinary medicine encompasses the full scope of the technology of animal health and disease, including the arts and sciences of disease prevention, diagnosis, prognosis and therapy. The professional curriculum begins at the basic level and systematically moves to clinical application.

Graduates are qualified to formulate and implement programs for disease control and prevention in domestic farm animals, poultry, pet animals,

zoo animals, fur-bearing animals, laboratory animals and wildlife. They are equipped to administer and advise in public health problems arising from intertransmission of diseases between humans and lower animals and are capable of performing animal disease regulatory duties for governmental agencies. They are also oriented for professional careers in the armed forces.

The degree of Doctor of Veterinary Medicine is awarded to the student upon successful completion of the professional curriculum in veterinary medicine. In addition to the DVM degree, the student must take and pass the NAVLE and state licensing examinations to practice clinical veterinary medicine.

Academic Regulations

Each professional student, upon registering, will receive a copy of the *College of Veterinary Medicine and Biomedical Sciences Professional Student Handbook* which contains the college's policies on grading, promotion, dismissal, probation, grievance procedures, withdrawal, personal conduct and the honor code. Because matriculation in veterinary medicine is a privilege and not a right, the faculty retains the prerogative to request withdrawal of any student who does not attain adequate academic performance or who does not exhibit the personal qualifications prerequisite to the practice of veterinary medicine. These criteria shall apply at all times during the curriculum. Academic performance will not be the only factor in determining admission, promotion, graduation or request for withdrawal.

Scholastic Deficiency

An average grade of C and passing grades in all courses in the professional curriculum are the minimal scholastic achievements considered to be satisfactory. When a student's scholastic performance falls below the minimal satisfactory level in any term, scholastic probation may be imposed or the student may be dropped from the professional curriculum or placed on scholastic suspension from the University.

Scholastic probation is conditional permission for a student to continue in the professional curriculum under the conditions of the probation while working to remove any deficiencies. A student's failure to meet the conditions of scholastic probation may result in dismissal from the professional curriculum or suspension from the University at the end of any term for which scholastic probation is imposed. The terms of the probation are determined by the Academic Progress Committee for the year of the curriculum in which scholastic deficiency occurs. A student who fails any course prescribed in the professional curriculum or who otherwise fails to achieve satisfactory scholastic progress may be dropped from the curriculum for cause.

Readmission

A student in the professional curriculum who voluntarily withdraws, or who is dropped from the rolls of the University or from the professional veterinary curriculum for cause, forfeits his or her standing and must apply for readmission and be approved before being re-enrolled by policies and procedures of the College of Veterinary Medicine and Biomedical Sciences.

NOTE: While every effort is made to assure accuracy and timeliness of this publication, the College of Veterinary Medicine and Biomedical Sciences is not responsible for any misrepresentation which might arise through error in the preparation of this catalog, or through failure to give notice of changes in its requirements, policies, tuition and fees, course offerings and other matters affecting students or applicants.

The provisions of this catalog do not constitute an irrevocable contract between any student or applicant for admission into the professional curriculum of the College of Veterinary Medicine and Biomedical Sciences.

College of Veterinary Medicine and Biomedical Sciences Admission Information (p. 41)

Program Requirements

The professional curriculum in veterinary medicine is a four-year program. During the first three years, classes are scheduled on a semester basis. The fourth-year curriculum consists of 24 weeks of Basic Core Rotations, 18 weeks of elective clinical rotations or career alternative electives, 4 weeks of externship and 2 weeks of vacation. The fourth-year curriculum allows students to choose a species directed career, i.e., equine, companion animal, rural/mixed animal, food animal or a career alternative track.

| First Year | | Semester Credit Hours |
|-----------------------------------|---------------------------------------------------------|-----------------------------|
| Fall | | |
| VIBS 910 | Small Animal Anatomy | 4 |
| VIBS 911 | Histology | 1 |
| VIBS 936 | Veterinarians in Society | 2 |
| VSCS 910 | Integrated Animal Care I | 3 |
| VTPB 910 | Veterinary Immunology | 2 |
| VTPP 910 | Physiology I | 6 |
| VTPP 914 | Professional & Clinical Skills I | 3 |
| Semester Credit Hours | | 21 |
| Spring | | |
| VIBS 912 | Clinical Anatomy of Large Animals | 3 |
| VIBS 914 | Professional & Clinical Skills II | 3 |
| VLCS 910 | Integrated Animal Care II | 2 |
| VTPB 922 | Pathology I | 3 |
| VTPB 925 | Agents of Disease I | 4 |
| VTPP 912 | Physiology II | 5 |
| Semester Credit Hours | | 20 |
| Second Year | | |
| Fall | | |
| VSCS 926 | Professional and Clinical Skills III | 3 |
| VTPB 930 | Agents of Disease II | 4 |
| VTPB 927 | Clinical Laboratory Medicine-Clinical Pathology | 5 |
| VIBS 928 | Public Health, Epidemiology and Evidence-Based Medicine | 3 |
| VTPB 923 | Pathology II | 3 |
| VTPP 924 | Pharmacology | 3 |
| (Dept.) 948 Elective ¹ | | 2 |
| Semester Credit Hours | | 23 |
| Spring | | |
| VLCS 924 | Diagnostic Imaging & Interpretation I | 2 |
| VLCS 926 | Professional & Clinical Skills IV | 3 |
| VSCS 930 | Principles of Anesthesia & Analgesia | 3 |
| VSCS 932 | Principles of Surgery | 2 |

| | | |
|---------------------------------------------|-----------------------------------------------------------------|-----|
| VTPB 932 | Organ Dysfunction: Recognition, Diagnostics and Supportive Care | 4 |
| VMID 944 | Integrated Animal Care III: Elements of Care | 4 |
| (Dept.) 948 Elective ¹ | | 2 |
| Semester Credit Hours | | 20 |
| Third Year | | |
| Fall | | |
| VLCS 956 | Large Animal Diagnostics & Therapeutics I | 3.5 |
| VLCS 925 | Diagnostic Imaging & Interpretation II | 2 |
| VMID 935 | Surgery | 5 |
| VSCS 934 | Professional & Clinical Skills V | 3 |
| VSCS 956 | Small Animal Diagnostics & Therapeutics I | 4.5 |
| Student will select one from the following: | | 2 |
| VLCS 958 | Career-Focus Tracking I - Food Animal | |
| VLCS 959 | Clinical Focus-Tracking I - Equine | |
| VSCS 958 | Clinical Focus-Tracking I - Companion Animal | |
| (Dept.) 988 Career Selective ² | | 4 |
| Semester Credit Hours | | 24 |
| Spring | | |
| VLCS 957 | Large Animal Diagnostics & Therapeutics II | 3.5 |
| VMID 964 | Clinical Experience | 3 |
| VMID 966 | Professional and Clinical Skills VI | 4 |
| VSCS 957 | Small Animal Diagnostics & Therapeutics II | 4.5 |
| Students will choose one of the following: | | 2 |
| VLCS 960 | Clinical Focus-Tracking II - Equine | |
| VLCS 961 | Career-Focus Tracking II - Food Animal | |
| VSCS 960 | Clinical Focus-Tracking II - Companion Animal | |
| (Dept.) 988 Career Selective ² | | 4 |
| Semester Credit Hours | | 21 |
| Fourth Year | | |
| Select a Clinical Track: ³ | | 48 |
| Companion Animal | | |
| Rural/Mixed Animal | | |
| Equine | | |
| Food Animal | | |
| Alternative | | |
| Semester Credit Hours | | 48 |
| Total Semester Credit Hours | | 177 |

¹ Students are required to take 2 elective courses during this semester.

² Students select 2 courses highlighting veterinary career options in public health & public policy, research, business & practice, lab animal medicine, exotics/zoo/wildlife, and avian/reptiles/pocket pets during this semester.

³ See student program manager for a complete list of courses designated for each track.

Fourth Year

The fourth-year curriculum consists of 26 weeks of basic core rotations, 18 weeks of elective clinical rotations or career alternative electives, 4 weeks of externship and 2 weeks of vacation for 48 credit hours. The fourth-year curriculum allows students to choose a species directed

career, i.e., large animal, small animal, mixed animal or an alternative career elective.

Basic Core Rotations¹

Small Animal Clinic (8 weeks)

- Small Animal Internal Medicine
- Primary Care Medicine
- General Surgery
- Small Animal Emergency

Large Animal Clinic (4 weeks)

- Food Animal Medicine/Ambulatory or Zoo Med
- Equine Medicine

Anesthesiology (4 weeks)

Community Connections (2 weeks)

Radiology (2 weeks)

Laboratory Services (2 weeks)

- Diagnostics

Houston SPCA (2 weeks)

- Animal Welfare and Shelter Medicine

Specialty Clinical Rotation (2 weeks)

Available Rotations¹

Small Animal Medicine

- Dermatology
- Critical Care
- Dentistry
- Cardiology
- Oncology
- Internal Medicine/Canine
- Internal Medicine/Feline
- Primary Care Medicine
- Neurology/Neurosurgery
- Zoological Medicine and Surgery

Small Animal Surgery

- General
- Orthopedic
- Soft Tissue

- Ophthalmology

Large Animal Hospital

- Food Animal Medicine & Surgery/Ambulatory
- Equine Medicine/Ultrasound
- Equine Field Services
- Equine Community Practice
- Equine Lameness
- Equine Soft Tissue Surgery
- Equine Orthopedic Surgery
- Equine Theriogenology
- Small Ruminant Theriogenology
- Dairy Reproduction
- TDCJ

Anesthesiology

TVMDL (Texas Veterinary Medical Diagnostic Lab)

Ultrasound

Alternative Career Electives

Externship

Vacation

¹ All rotations are two weeks.

Department of Veterinary Integrative Biosciences

Head: C. Jane Welsh

The Department of Veterinary Integrative Biosciences (VIBS) offers graduate degree programs aimed at educating students to advance biomedical science through original research and to disseminate that knowledge for the protection and promotion of animal and human health. The department awards the interdepartmental **MS and PhD degrees in Biomedical Sciences** (with specialties in Biomedical Genomics and Bioinformatics, Clinical and Translational Sciences, Epidemiology, Infection and Immunity, and Physiology and Developmental Biology). Also managed and awarded by the department are the interdepartmental MS degree in Science and Technology Journalism and the departmental MS degree in Veterinary Public Health-Epidemiology.

Many of the department faculty participate in University-wide graduate training programs in Neuroscience, Reproductive Biology, Genetics, Toxicology, Biotechnology, and Ecology and Evolutionary Biology.

In addition to developing research expertise in their specialty, students have the opportunity to learn anatomy, public health practices, and genomics in a variety of domestic species, wildlife species, and laboratory animals. Training in anatomy spans histology, histochemistry, neuroanatomy, and state-of-the-art interactive laser

microscopy. Training in public health emphasizes epidemiology, food safety, food toxicology and control of zoonotic diseases. Training in genomics emphasizes genetics of health and disease, phylogeny of mammalian species, bioinformatics and comparative genomics.

The Master of Science in Science and Technology Journalism is a distinctive program to prepare students for careers as science and technology writers, reporters and editors in the public media, government, industry, academia and other sectors. It also can serve as a foundation for doctoral study.

The Master of Science in Veterinary Public Health-Epidemiology is designed to serve the needs of veterinarians and those with an interest in public health wishing to go into some aspects of government service, military veterinary personnel seeking advanced training in public health and students with a career goal of academia or research.

Students prepare degree plans that fit their area of study and professional or research goals in consultation with a committee of graduate faculty members led by a faculty mentor/chairperson. The general procedural rules are those specified in this catalog. More details on core course requirements, degree plans, and administrative matters are available in the college's "Graduate Student Handbook."

Faculty

Andersson, Leif B, Professor
Vet Integrative Biosciences
PHD, Swedish University of Agricultural Sciences, Uppsala, 1984

Arosh, Joe A, Professor
Vet Integrative Biosciences
PHD, Universite Laval, 2004

Arosh, Sakhila B, Associate Professor
Vet Integrative Biosciences
PHD, University of Madras, 2002

Bergthorsson, Ulfar, Associate Professor
Vet Integrative Biosciences
PHD, University of Rochester, 1998

Budke, Christine M, Professor
Vet Integrative Biosciences
PHD, Philosophisch-Naturwissenschaftliche Fakultät der Universität Basel, 2004
DVM, Purdue University, 2001

Burghardt, Robert C, Professor
Vet Integrative Biosciences
PHD, Wayne State University, 1976

Cai, Jing, Associate Professor
Vet Integrative Biosciences
PHD, University of Hong Kong, 2006

Chiu, Weihsueh A, Professor
Vet Integrative Biosciences
PHD, Princeton University, 1998

Curley Jr, Kevin O, Instructional Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2012

Davis, Brian W, Research Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2013

Dees, William L, Professor Emeritus
Vet Integrative Biosciences
PHD, Texas A&M University, 1982

Frank-Cannon, Tamy C, Clinical Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2005
DVM, Texas A&M University, 1996

Gaddy, Dana, Professor
Vet Integrative Biosciences
PHD, Baylor College of Medicine, 1991

Gastel, Barbara J, Professor
Vet Integrative Biosciences
MD, Johns Hopkins University, 1978

Gonzales, Molly McCarty, Instructional Assistant Professor
Vet Integrative Biosciences
EDD, Pepperdine University, 2017

Hamer, Sarah A, Associate Professor
Vet Integrative Biosciences
DVM, Michigan State University, 2011
PHD, Michigan State University, 2010

Hartberg, Yasha M, Lecturer
Vet Integrative Biosciences
PHD, Binghamton University, 2016

Herman, Cheryl L, Clinical Associate Professor
Vet Integrative Biosciences
DVM, University of Saskatchewan, 1987

Hiney, Jill K, Research Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1996

Hoffman, Anton G, Clinical Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1992
DVM, Texas A&M University, 1986

Johnson, Gregory A, Professor
Vet Integrative Biosciences
PHD, University of Wyoming, 1997

Johnson, Larry, Professor
Vet Integrative Biosciences
PHD, Colorado State University, 1978

Juras, Rytis, Research Assistant Professor
Vet Integrative Biosciences
PHD, Lithuanian Veterinary Academy, 2005
DVM, Lithuanian Veterinary Academy, 2000

Katju, Vaishali, Associate Professor
Vet Integrative Biosciences
PHD, Indiana University, 2004

Kim, Sun J, Research Assistant Professor
Vet Integrative Biosciences
PHD, Sogang University, 2006

Klemm, William R, Senior Professor
Vet Integrative Biosciences
PHD, University of Notre Dame, 1963
DVM, Auburn University, 1958

Kneese, Dana A, Clinical Assistant Professor
Vet Integrative Biosciences
DVM, Texas A&M University, 2013
PHD, Texas A&M University, 2009

Ko, Gladys Y, Associate Professor
Vet Integrative Biosciences
PHD, Kent State University, 1996

Ko, Michael L, Research Assistant Professor
Vet Integrative Biosciences
PHD, Kent State University, 1997

Kornegay, Joe N, Professor
Vet Integrative Biosciences
PHD, University of Georgia, 1982

Langford, Candice L, Research Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2006

Li, Jianrong, Professor
Vet Integrative Biosciences
PHD, University of Hawaii at Manoa, 1997

Li, Qinglei, Associate Professor
Vet Integrative Biosciences
PHD, Harbin Medical University, 2001

Lyczak, Kristin C, Clinical Assistant Professor
Vet Integrative Biosciences
DVM, Colorado State University, 2003

Mouneimne, Roula, Research Professor
Vet Integrative Biosciences
PHD, Lyon I University, 1984

Murphy, William J, Professor
Vet Integrative Biosciences
PHD, The University of Tulsa, 1997

Ndeffo Mbah, Martial Loth, Assistant Professor
Vet Integrative Biosciences
PHD, University of Cambridge, UK, 2010

Nghiem, Peter P, Assistant Professor
Vet Integrative Biosciences
PHD, George Washington University, 2014
DVM, Texas A&M University, 2008

Norman, Keri N, Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2010

Phillips, Timothy D, Distinguished Professor
Vet Integrative Biosciences
PHD, University of Southern Mississippi, 1975

Pine, Michelle D, Clinical Associate Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2002
DVM, University of Missouri-Columbia, 1991

Porter, Weston W, Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1997

Qian, Yongchang, Research Associate Professor
Vet Integrative Biosciences
PHD, Shanghai Institutes for Biological Sciences, 1990

Raudsepp, Terje, Professor
Vet Integrative Biosciences
PHD, Swedish University of Agricultural Sciences, 1999

Rijnkels, Monique G, Research Assistant Professor
Vet Integrative Biosciences
PHD, Leiden University, 1997

Ritter, Nicola L, Instructional Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2014

Ruoff, Lynn M, Clinical Professor
Vet Integrative Biosciences
DVM, Colorado State University, 1975

Rusyn, Ivan I, Professor
Vet Integrative Biosciences
PHD, University of North Carolina at Chapel Hill, 2000

Seo, Heewon, Research Assistant Professor
Vet Integrative Biosciences
PHD, Yonsei University, 2012

Shi, Liheng, Research Assistant Professor
Vet Integrative Biosciences
PHD, Osaka University, 2001

Skow, Loren C, Senior Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1976

Tayce, Jordan D, Instructional Assistant Professor
Vet Integrative Biosciences
DVM, Texas A&M University, 2008

Taylor, Robert J, Research Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1987

Tiffany-Castiglioni, E, Professor
Vet Integrative Biosciences
PHD, University of Texas Medical Branch at Galveston, 1979

Venkatraj, Vijayanagaram S, Clinical Associate Professor
Vet Integrative Biosciences
PHD, New York University, 1992

Welsh, Christabel Jane, Professor
Vet Integrative Biosciences
PHD, London University, 1981

Masters

- Master of Science in Veterinary Public Health - Epidemiology (p. 1342)

Master of Science in Veterinary Public Health Epidemiology

The Department of Veterinary Integrative Biosciences offers, through its Epidemiology and Public Health Program, a thesis and non-thesis Master of Science in Veterinary Public Health-Epidemiology that prepare students for further epidemiologic research training and career opportunities centered on public health. These M.S. degree options in Veterinary Public Health-Epidemiology are offered with approval of a program faculty advisor.

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

- ¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.
- ² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1343)
- Degree Plan (p. 1343)
- Credit Requirements (p. 1343)
- Transfer of Credit (p. 1343)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1344)
- Thesis Option (p. 1344)

- Thesis Proposal (p. 1344)
- Final Examination/Thesis Defense (p. 1345)
- Non-Thesis Option (p. 1345)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the

entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpps.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the

registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's

own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition

for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1345)
- Continuous Registration (p. 1346)
- Time Limit (p. 1346)
- Foreign Languages (p. 1346)
- Application for Degree (p. 1346)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Veterinary Large Animal Clinical Sciences

<https://vlcs.tamu.edu>

Head: S. C. Eades

Graduate Advisor: N. D. Cohen

The Department of Veterinary Large Animal Clinical Sciences (VLCS) has a strong commitment to scholarship and graduate education with an emphasis on research and training relevant to the health and welfare of horses and other farm animals. Degrees offered include both the Master of Science (MS) and Doctor of Philosophy (PhD) in Biomedical Sciences.

In addition, some faculty members participate in interdisciplinary programs of study such that it is possible to earn MS or PhD degrees in Genetics, Nutrition, Reproductive Sciences, and Toxicology through VLCS.

The established areas of study in VLCS include infectious diseases, reproduction, diagnostic imaging, and regenerative medicine. Admission to the graduate program must be obtained through the College of Veterinary Medicine and Biomedical Sciences office of graduate studies (<http://vetmed.tamu.edu/graduate>). Prospective graduate students are encouraged to first identify a VLCS faculty member willing to accept them as a graduate student before applying. More information about faculty research interests, admission to graduate studies, and the department is available at <https://vlcs.tamu.edu>.

Faculty

Arnold, Carolyn E, Associate Professor
Vet Large Animal Clinical Sc
DVM, Michigan State University, 1998

Barling, Kerry, Lecturer
Vet Large Animal Clinical Sc
DOC, Texas A&M University, 2000
PHD, Texas A&M University, 2000
DVM, Texas A&M University, 1987

Bevevino, Kari E, Veterinary Resident Instructor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2015

Bissett Jr, Wesley T, Associate Professor
Vet Large Animal Clinical Sc
PHD, Texas A&M University, 2007
DVM, Texas A&M University, 1997

Bordin, Angela I, Assistant Professor
Vet Large Animal Clinical Sc
DOC, Texas A&M University, 2014
DVM, Federal University of Santa Maria, Brazil, 2002

Brinsko, Steven P, Professor
Vet Large Animal Clinical Sc
PHD, Cornell University, 1995
DVM, University of Florida, 1985

Cerfogli, Jennifer A, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Iowa State University, 2001

Chaffin, Morgan K, Professor
Vet Large Animal Clinical Sc
DVM, North Carolina State University, 1985

Cohen, Noah D, Professor
Vet Large Animal Clinical Sc
PHD, Johns Hopkins University, 1988
DVM, University of Pennsylvania, 1983

Coleman, Michelle C, Assistant Professor
Vet Large Animal Clinical Sc
DVM, University of Georgia, 2007

Doering, Alyssa K, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, Colorado State University, 2015

Dominguez, Brandon J, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2005

Eades, Erma S, Professor
Vet Large Animal Clinical Sc
PHD, University of Georgia, 1988
DVM, Louisiana State University, 1982

Easterwood, Leslie A, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1995

Fridley, Jennifer, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Mississippi State University, 2014

Gilmour, Lindsey J, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2009

Glass, Kati P, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2012

Green, Eleanor M, Professor
Vet Large Animal Clinical Sc
DVM, Auburn University, 1973

Griffin IV, John F, Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2004

Griffin, Cleet E, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1990

Griffin, Dicky D, Clinical Professor
Vet Large Animal Clinical Sc
DVM, Oklahoma State University, 1975

Hardy, Joanne, Clinical Associate Professor
Vet Large Animal Clinical Sc
PHD, The Ohio State University, 1996
DVM, University of Montreal, 1982

Hartnack, Amanda K, Assistant Professor
Vet Large Animal Clinical Sc
DVM, Colorado State University, 2010

Hicks, Rebecca, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, Cornell University College of Veterinary Medicine, 2017

Kelley, Dale, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Florida, 2017
PHD, University of Florida, 2013

Kneese, Eric, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2012

Krenek, Nancy, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DOC, The University of Texas Medical Branch, 2014

Love, Charles C, Professor
Vet Large Animal Clinical Sc
DVM, University of Missouri-Columbia, 1984

Martin, Michael T, Senior Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1968

Martinez De Andino, Elena V, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Pennsylvania School of Veterinary Medicine, 2016

Mays, Glennon B, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1976

Navas De Solis, Cristobal, Clinical Assistant Professor
Vet Large Animal Clinical Sc
PHD, Universidad Autonoma de Barcelona, 2013
DVM, Universidad Cardenal Herrera CEU, 2001

Ohlendorf, Alex K, Veterinary Resident Instructor
Vet Large Animal Clinical Sc
DVM, University of California, Davis, 2015

Posey, Richard D, Clinical Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1982

Poteet, Brian A, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1991

Rodriguez, Natalia, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Georgia, 2015

Romano, Juan E, Professor
Vet Large Animal Clinical Sc
PHD, Texas A&M University, 2004
DVM, Universidad del Uruguay, 1985

Roussel, Allen J, Professor
Vet Large Animal Clinical Sc
DVM, Louisiana State University, 1977

Russell, Lauren A, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Atlantic Veterinary College, 2014

Sampson, Sarah N, Clinical Assistant Professor
Vet Large Animal Clinical Sc
PHD, Washington State University, 2008
DVM, Washington State University, 1999

Schmitz, David G, Visiting Associate Professor
Vet Large Animal Clinical Sc
DVM, Kansas State University, 1976

Thomas, Sarah Jane, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, The Ohio State University College of Veterinary Medicine, 2015

Thompson, James A, Professor
Vet Large Animal Clinical Sc
DVM, University of Guelph, 1982

Vallone, Jessica M, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Mississippi State University, 2012

Varner, Dickson D, Professor
Vet Large Animal Clinical Sc
DVM, University of Missouri, 1978

Voges Gariepy, Andra-Kay, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1991

Washburn, Kevin E, Professor
Vet Large Animal Clinical Sc
DVM, Oklahoma State University, 1993

Watkins, Jeffrey P, Professor
Vet Large Animal Clinical Sc
DVM, Kansas State University, 1980

Watts, Ashlee E, Associate Professor
Vet Large Animal Clinical Sc
DVM, Colorado State University, 2003

Whitfield-Cargile, Canaan M, Assistant Professor
Vet Large Animal Clinical Sc
DVM, University of Georgia, 2006

Yanchik, Ashley E, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Pennsylvania School of Veterinary Medicine, 2011

Department of Veterinary Pathobiology

<http://vetmed.tamu.edu/vtpb>

Head: Ramesh Vemulapalli

Graduate Advisor: Albert Mulenga

Faculty in the Department of Veterinary Pathobiology (VTPB) participate in training graduate students in the College of Veterinary Medicine and Biomedical Sciences, and offer instruction and research leading to the degrees of Master of Science (MS) and Doctor of Philosophy (PhD) in Biomedical Sciences. Department faculty also contribute to the academic and research training for university-wide interdisciplinary programs in Biotechnology, Genetics, and Toxicology that lead to MS and PhD degrees. Major specialty areas include infectious diseases (virology, bacteriology, parasitology), biodefense and emerging infectious diseases, metabolic diseases, genetics/genomics, neuroscience, cardiovascular science, and immunology and are options for students pursuing any graduate degree awarded by the Department.

The Department also offers post-doctoral (DVM) residency/graduate programs in anatomic pathology, clinical pathology, and laboratory animal medicine. Residents are required to enroll in graduate courses and may pursue either a Master of Science or Doctor of Philosophy degree. Minimum qualifications for residency programs include a DVM/VMD or equivalent degree. Selection of residents is made on the basis of academic achievement, letters of recommendation, and pertinent experience.

For further information regarding these programs, please contact resgrad@cvm.tamu.edu or Dr. Albert Mulenga (amulenga@cvm.tamu.edu) (mcriscitiello@cvm.tamu.edu). Also, the following websites may provide additional information: Comparative Medicine Program (<http://cmp.tamu.edu/>); Veterinary Pathobiology (<http://vetmed.tamu.edu/vtpb>); Texas A&M University (<http://www.tamu.edu/>); Office of Graduate and Professional Studies (<http://ogaps.tamu.edu/>); College of Veterinary Medicine and Biomedical Sciences (<http://vetmed.tamu.edu/>); and a

guide to the Bryan-College Station area (<http://vetmed.tamu.edu/area-information>).

Faculty

Adams, Leslie G, Senior Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1968
DVM, Texas A&M University, 1964

Arenas, Angela M, Assistant Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2007
DVM, La Salle University, Colombia, 2002

Brightsmith, Donald J, Associate Professor
Veterinary Pathobiology
PHD, Duke University, 1999

Bryan, Laura K, Clinical Assistant Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2018
DVM, University of Georgia, 2011

Chaki, Sankar P, Research Assistant Professor
Veterinary Pathobiology
PHD, National Institute of Health & Family Welfare (Vidysagar University), 2005

Clubb Jr, Fred J, Clinical Professor
Veterinary Pathobiology
PHD, University of Alabama - Birmingham, 1983
DVM, Auburn University, 1971

Cook, Walter E, Clinical Associate Professor
Veterinary Pathobiology
PHD, University of Wyoming, 1999
DVM, University of California - Davis, 1994

Criscitiello, Michael F, Associate Professor
Veterinary Pathobiology
PHD, University of Miami, 2003

Derr, James N, Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1990

Dindot, Scott V, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2003

Esteve-Gasent, Maria D, Assistant Professor
Veterinary Pathobiology
PHD, Universidad de Valencia, Spain, 2003

Gomes Verocai, Guilherme, Clinical Assistant Professor
Veterinary Pathobiology
PHD, University of Calgary, 2015

Hillhouse, Andrew E, Research Assistant Professor
Veterinary Pathobiology
PHD, University of Missouri-Columbia, 2010

Hodo, Carolyn L, Lecturer
Veterinary Pathobiology
PHD, Texas A&M University, 2017
DVM, University of Georgia, 2011

Jeter, Elizabeth A, Lecturer
Veterinary Pathobiology
DVM, Texas A&M University, 1982

Johnson, Mark C, Clinical Professor
Veterinary Pathobiology
DVM, Texas A&M University, 1988

Kier, Ann B, Senior Professor
Veterinary Pathobiology
PHD, University of Missouri - Columbia, 1979
DVM, Texas A&M University, 1974

Krecek, Rosina C, Visiting Professor
Veterinary Pathobiology
PHD, University of Pretoria, 1985

Lawhon, Sara D, Associate Professor
Veterinary Pathobiology
PHD, North Carolina State University, 2003
DVM, Texas A&M University, 1997

Levine, Gwendolyn J, Clinical Associate Professor
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DVM, Texas A&M University, 2006

Locke, Unity B, Assistant Professor
Veterinary Pathobiology
DVM, University of Cambridge, 2008

Logan, Linda L, Professor
Veterinary Pathobiology
PHD, University of California-Davis, 1987
DVM, Texas A&M University, 1976

Lupiani, Blanca M, Professor
Veterinary Pathobiology
PHD, University of Maryland-College Park, 1994

Mulenga, Albert, Professor
Veterinary Pathobiology
PHD, Hokkaido University, 1999

Musser, Jeffrey M, Clinical Professor
Veterinary Pathobiology
PHD, North Carolina State University, 2000
DVM, Virginia Tech, 1989

Nabity, Mary B, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2010
DVM, Cornell University, 2002

Omran, Mohamed T, Clinical Assistant Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1995

Payne, Susan L, Associate Professor
Veterinary Pathobiology
PHD, Louisiana State University, 1983

Porter, Brian F, Clinical Professor
Veterinary Pathobiology
DVM, Texas A&M University, 1992

Rech, Raquel R, Clinical Assistant Professor
Veterinary Pathobiology
PHD, Federal University of Santa Maria (UFSM), 2007
DVM, Santa Catarina State University, 1999

Reddy, Sanjay M, Professor
Veterinary Pathobiology
PHD, University of Maryland, College Park, 1994
DVM, Andhra Pradesh Agricultural University, India, 1986

Rivera, Gonzalo M, Associate Professor
Veterinary Pathobiology
PHD, Cornell University, 2002
DVM, National University of Rio Cuarto, Argentina, 1988

Rodrigues Hoffmann, Aline, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2011

Rogovsky, Artem S, Assistant Professor
Veterinary Pathobiology
PHD, Washington State University, 2014
DVM, National Agricultural University, 2001

Russell, Karen E, Professor
Veterinary Pathobiology
PHD, North Carolina State University, 1997
DVM, Virginia Tech, 1990

Scott, Harvey M, Professor
Veterinary Pathobiology
PHD, University of Guelph, 1998
DVM, University of Saskatchewan, 1988

Seabury, Christopher M, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2004

Subashchandrabose, Sargurunathan, Assistant Professor
Veterinary Pathobiology
PHD, Michigan State University, 2011
BVSc, Madras Veterinary College Tamil Nadu Veterinary and Animal Sciences University, 2005

Threadgill, David W, Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1989

Turner, Kenneth E, Lab Instructor
Veterinary Pathobiology
DVM, University of Pennsylvania, 1992

Vemulapalli, Ramesh, Professor
Veterinary Pathobiology
PHD, University of Maryland, 1996
BVSc, Andhra Pradesh Agricultural University, India, 1986

Vemulapalli, Tracy H, Clinical Associate Professor
Veterinary Pathobiology
DVM, Virginia-Maryland Regional College of Veterinary Medicine, 1998

Weeks, Bradley R, Professor
Veterinary Pathobiology
PHD, Kansas State University, 1988
DVM, Oklahoma State University, 1983

Wiener, Dominique Judith, Clinical Assistant Professor
Veterinary Pathobiology
PHD, University of Bern, Switzerland, 2011
PHD, University of New Bern, 2011
PHD, University of Bern, 2010
PR1, University of Bern, 2005

Womack, James E, Senior Distinguished Professor
Veterinary Pathobiology
PHD, Oregon State University, 1968

Zhu, Guan, Professor
Veterinary Pathobiology
PHD, University of Georgia, 1993

Department of Veterinary Physiology and Pharmacology

<https://physiology.tamu.edu>

Head: Larry J. Suva

The Department of Veterinary Physiology and Pharmacology is the only department of its kind in the state of Texas with a rich tradition of excellence in education, research and outreach to impact both veterinary and human medicine. The department has expertise in toxicology, reproductive science, cardiovascular science, tissue regeneration and bone biology.

The primary research focus areas within the department are extramurally funded, internationally renowned and significantly contribute to improving human and veterinary health. Extensive research collaborations with the Colleges of Agriculture and Life Sciences, Science, Engineering and Education and Human Development, as well as with the Texas A&M University Health Science Center, School of Public Health, Texas A&M AgriLife Research and the Texas A&M Engineering Experiment Station provide exceptional resources that enhance all departmental research efforts.

Our faculty, many of whom are leaders in their fields and key contributors to the scientific and educational literature, are also strong mentors that form the basis for a strong graduate research and education experience. Most importantly, they are accessible, focused and student-friendly with a deep understanding of the art and science of education and research.

Faculty

Bailey, Everett M, Professor
Vet Physiology & Pharmacology
PHD, Iowa State University, 1968
DVM, Texas A&M University, 1964

Blue-Mclendon, Alice, Clinical Associate Professor
Vet Physiology & Pharmacology
DVM, Texas A&M University, 1989

Brunauer, Regina, Research Assistant Professor
Vet Physiology & Pharmacology
PHD, Medical University Innsbruck, Austria, 2011

Clement, Tracy M, Assistant Professor
Vet Physiology & Pharmacology
PHD, Washington State University, 2009

Davis, Amanda R, Lecturer
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2017

Dawson, Lindsay A, Research Assistant Professor
Vet Physiology & Pharmacology
PHD, Tulane, 2014
PHD, Tulane University, 2014

Dongaonkar, Ranjeet M, Assistant Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2008

Fajt, Virginia R, Clinical Professor
Vet Physiology & Pharmacology
PHD, Iowa State University, 2000
DVM, Auburn University, 1995

Golding, Michael C, Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2003

Han, Guichun, Clinical Assistant Professor
Vet Physiology & Pharmacology
PHD, Dalian Medical University, China, 2002

Heaps, Cristine L, Associate Professor
Vet Physiology & Pharmacology
PHD, University of Missouri - Columbia, 1999

Herman, James D, Clinical Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1995
DVM, Texas A&M University, 1989

Hinrichs, Katrin, Professor
Vet Physiology & Pharmacology
PHD, University of Pennsylvania, 1988
DVM, University of California, Davis, 1978

Ivanov, Ivan V, Clinical Associate Professor
Vet Physiology & Pharmacology
PHD, University of South Florida, 1999

Jin, Un Ho, Research Assistant Professor
Vet Physiology & Pharmacology
PHD, Dong-A University, Busan, Korea, 2004

Kraemer, Duane C, Senior Professor
Vet Physiology & Pharmacology
DVM, Agricultural & Mechanical College, 1966
PHD, Agricultural & Mechanical College, 1966

Laine, Glen A, Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1980

Long, Charles R, Professor
Vet Physiology & Pharmacology
PHD, University of Massachusetts - Amherst, 1996

Lyons, Luke C, Lecturer
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2018

Muneoka, Ken, Professor
Vet Physiology & Pharmacology
PHD, University of California - Irvine, 1983

Newell-Fugate, Anne E, Assistant Professor
Vet Physiology & Pharmacology
PHD, University of Illinois-Urbana Champaign, 2012
DVM, North Carolina State University, 2004

Patterson, Carly A, Clinical Assistant Professor
Vet Physiology & Pharmacology
DVM, University of Illinois, 2011

Quick, Christopher M, Professor
Vet Physiology & Pharmacology
PHD, Rutgers University, 1999

Ramadoss, Jayanth, Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2008

Safe, Stephen H, University Distinguished Professor
Vet Physiology & Pharmacology
PHD, University of Oxford, 1966

Schroeder, Friedhelm, Senior Professor
Vet Physiology & Pharmacology
PHD, Michigan State University, 1974
PHD, Michigan State University, 1970

Stallone, John N, Professor
Vet Physiology & Pharmacology
PHD, University of Arizona, 1984

Stewart, Randolph H, Clinical Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1997
DVM, Texas A&M University, 1983

Suva, Larry J, Professor & Department Head
Vet Physiology & Pharmacology
PHD, The University of Melbourne, 1992

Tian, Yanan, Associate Professor
Vet Physiology & Pharmacology
PHD, Rutgers University, 1993

Washburn, Shannon E, Clinical Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2010
DVM, Texas A&M University, 1994

Wasser, Jeremy S, Associate Professor
Vet Physiology & Pharmacology
PHD, Indiana University, 1985

Westhusin, Mark E, Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1986

Yu, Ling, Research Associate Professor
Vet Physiology & Pharmacology
PHD, Nanjing Agricultural University, 2001

Zarei, Mahsa, Research Assistant Professor
Vet Physiology & Pharmacology
PHD, University of Mysore (India), 2014
PHD, University of Mysore, India, 2014

Department of Veterinary Small Animal Clinical Sciences

<http://vetmed.tamu.edu/vscs>

Head: Jonathan M. Levine

The Department of Small Animal Clinical Sciences has three major missions: leading edge patient and client care, transformational learning, and clinical research. Each of these activities is intended to improve the quality of life for companion animals and their owners. Faculty and staff in the department participate in all four years of the professional curriculum, although most interactions with students occur in the third and fourth years. The department offers a one-year internship program for the newly graduated veterinarians, and three-year and four-year residency programs in several clinical disciplines for veterinarians seeking advanced training and board certification. Faculty and staff frequently contribute to continuing education programs and may teach and mentor students earning the interdepartmental graduate degrees in Biomedical Sciences offered by the College of Veterinary Medicine & Biomedical Sciences.

Scholarly programs of the faculty are centered mainly on the study of the spontaneously occurring diseases of the patients presented to the Small Animal Hospital. Investigative programs are active in anesthesiology, animal behavior, cardiology, clinical nutrition, dermatology, feline internal medicine, gastroenterology, general surgery, G.I. Lab, internal medicine, neurology/neurosurgery, oncology, and orthopedic and soft tissue surgery. We also have a growing portfolio of clinical trials, aimed at improving animal and human health.

Approximately, 22,000 animals are presented to the Small Animal Hospital for advanced diagnostic procedures and state-of-the-art treatment methods. Faculty, staff, and fourth-year students participate as a team in the care of these patients. Many of these patients are referred from veterinarians throughout Texas and the region, so that they may receive the benefits of the unique expertise and diagnostic and therapeutic technology offered by the Small Animal Hospital.

Faculty

Andruzzi, Melissa N,
Vet Small Animal Clinical Sc
DVM, University of Illinois, 2017

Armstrong, Kristin N, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of Missouri, 2017

Baetge, Courtney L, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2003

Barnes, Katherine Hirose, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Oregon State University College of Veterinary Medicine, 2011

Beaver, Bonnie V, Professor
Vet Small Animal Clinical Sc
DVM, University of Minnesota, 1968

Bennett, Brad S, Clinical Assistant Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 2007

Bilof, Katherine, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, University of Missouri, Columbia, 2012

Boudreau, Christen E, Assistant Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2010
PHD, Baylor College of Medicine, 2001

Brehm, Amanda J, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of Missouri, 2015

Cook, Audrey K, Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Edinburgh, 1989

Cornell, Karen K, Professor
Vet Small Animal Clinical Sc
PHD, Purdue University, 1998
DVM, Purdue University, 1988

Creevy, Kate E, Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Tennessee, 1998

Darden, Joshua E, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of Georgia, 2016

Davidson, Jacqueline R, Clinical Professor
Vet Small Animal Clinical Sc
DVM, University of Minnesota, 1986

Deveau, Michael A, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Kansas State University, 2005

Diesel, Alison B, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Kansas State University, 2005

Dodd, Johnathon R, Clinical Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1979

Eckman, Stacy L, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2001

Gordon, Sonya G, Professor
Vet Small Animal Clinical Sc
DVM, University of Guelph, 1994

Graham, Amber Marie, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of Missouri, 2017

Grimes, Millie A, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of California, 2015

Hasiuk, Michelle M, Veterinary Resident
Vet Small Animal Clinical Sc
MD, University of Calgary, 2015

Heatley, Jennifer J, Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1995

Heinz, Justin A, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Purdue University, 2012

Heseltine, Johanna C, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, University of Saskatchewan, 1998

Hindmarsh, Dalton Douglas, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, Colorado State University, 2016

Hinson, Whitney D, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, The University of Georgia, 2015

Honnas, Cheri M, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2017

Hoppes, Sharman M, Clinical Professor
Vet Small Animal Clinical Sc
DVM, Oklahoma State University, 1993

Janacek, Blakeley, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2016

Jeffery, Nicholas D, Professor
Vet Small Animal Clinical Sc
PHD, The University of Cambridge, 1997

Kerwin, Sharon C, Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1988

Krasnow, Maya S, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, The Ohio State University, 2016

Levine, Jonathan M, Professor
Vet Small Animal Clinical Sc
DVM, Cornell University, 2001

Lidbury, Jonathan A, Assistant Professor
Vet Small Animal Clinical Sc
BVetM, University of Glasgow, 2002

Little, Adam L, Assistant Professor of the Practice
Vet Small Animal Clinical Sc
DVM, University of Guelph, 2013

Loria Lepiz, Mauricio A, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Universidad Nacional de Costa Rica, 2000

Mankin, Joseph M, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Tennessee-Knoxville, 2007

Mankin, Kelley M, Assistant Professor
Vet Small Animal Clinical Sc
DVM, University of Missouri-Columbia, 2006

McCool, Katherine Elizabeth, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, The Ohio State University, 2012

Moreno, Kara L, Veterinary Resident
Vet Small Animal Clinical Sc
MD, University of Minnesota, 2005

Paranjape, Vaidehi Vinay, Clinical Assistant Professor
Vet Small Animal Clinical Sc
BVSc, MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, 2009

Patterson, Adam P, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Mississippi State University, 2001

Pavlova, Elena, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, Louisiana State University, 2017

Peycke, Laura E, Clinical Professor
Vet Small Animal Clinical Sc
DVM, Louisiana State University, 1998

Richards, Amanda, Lecturer
Vet Small Animal Clinical Sc
DVM, Colorado State University, 2016

Rogers, Kenita S, Professor
Vet Small Animal Clinical Sc
DVM, Louisiana State University, 1982

Rutter, Christine R, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Mississippi State University, 2003

Saunders, Ashley B, Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2001

Saunders, William B, Associate Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 2005
DVM, Texas A&M University, 2001

Scallan, Elizabeth M, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Ross University School of Veterinary Medicine, 2007

Schmitz, Katrina L, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, St. George's University, 2016

Scott, Erin M, Assistant Professor
Vet Small Animal Clinical Sc
DVM, University of Pennsylvania, 2015

Simon, Bradley T, Assistant Professor
Vet Small Animal Clinical Sc
DVM, Ross University, 2007

Smith, Lauren, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2013

Steiner, Joerg M, Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 2000

Sterman, Allyson A, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, The Ohio State University, 2015

Stickney, Mark J, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1997

Suchodolski, Jan, Associate Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 2005

Teller, Lori Massin, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1990

Tolbert, Mary K, Clinical Associate Professor
Vet Small Animal Clinical Sc
PHD, North Carolina State University, 2013
DVM, University of Georgia, 2006

Vallone, Lucien V, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Mississippi State University, 2011

Wesselowski, Sonya R, Assistant Professor
Vet Small Animal Clinical Sc
DVM, Kansas State University, 2008

Wilson-Robles, Heather M, Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Tennessee, 2003

Zoran, Debra L, Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 1997
DVM, Kansas State University, 1984

DEGREES AND PROGRAMS OFFERED

Degree Program Tables

Undergraduate, Graduate and Professional Degree Programs

Approved by the Texas Higher Education Coordinating Board

Interdisciplinary Degree Programs

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|--------------------------------------------|---------------|---------|-----------|--------------|
| Agribusiness | | MAB | | |
| Agribusiness and Managerial Economics | | | PhD | |
| Biotechnology | | MBIOT | | |
| Ecology and Evolutionary Biology | | | PhD | |
| Energy | | MS | | |
| Environmental Studies | BS | | | |
| Genetics ¹ | | MS | PhD | |
| Marine Biology ² | | MS | PhD | |
| Molecular and Environmental Plant Sciences | | MS | PhD | |
| Neuroscience | | MS | PhD | |
| Spatial Sciences | BS | | | |
| Toxicology | | MS | PhD | |
| University Studies | BA, BS | | | |
| Water Management and Hydrological Science | | MS, MWM | PhD | |

- ¹
In cooperation among the Colleges of Agriculture and Life Sciences, Medicine, Science and Veterinary Medicine and Biomedical Sciences.
- ²
Joint program with Texas A&M University, Texas A&M University at Galveston and Texas A&M University–Corpus Christi.

College of Agriculture and Life Sciences

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|---------------------------------------------------------------------|---------------|----------|-----------|--------------|
| Renewable Natural Resources | BS | | | |
| Department of Agricultural Economics | | | | |
| Agribusiness | BS | | | |
| Agricultural Economics | BS | MS, MAgr | PhD | |
| Department of Agricultural Leadership, Education and Communications | | | | |
| Agricultural Communication and Journalism | BS | | | |
| Agricultural Development | | MAgr | | |

| | | | | |
|--------------------------------------------------------------------|--------|-----------|------------------|--|
| Agricultural Education | | | EdD ¹ | |
| Agricultural Leadership and Development ² | BS | | | |
| Agricultural Leadership, Education, and Communication ² | | MS, MEd | PhD | |
| Agricultural Science ² | BS | | | |
| Department of Animal Science | | | | |
| Animal Breeding | | MS | PhD | |
| Animal Science | BS | MS, MAgr | PhD | |
| Equine Industry Management | | MEIM | | |
| Physiology of Reproduction | | MS | PhD | |
| Department of Biochemistry and Biophysics | | | | |
| Biochemistry | BS | MS | PhD | |
| Genetics | BS | | | |
| Department of Biological and Agricultural Engineering | | | | |
| Agricultural Systems Management | BS | MS, MAgr | | |
| Biological and Agricultural Engineering | BS | MS, MEngr | PhD | |
| Department of Ecosystem Science and Management | | | | |
| Ecological Restoration | BS | | | |
| Ecosystem Science and Management | | MS, MAgr | PhD | |
| Forestry | BS | | | |
| Natural Resources Development | | MNRD | | |
| Rangeland Ecology and Management | BS | | | |
| Spatial Sciences | BS | | | |
| Department of Entomology | | | | |
| Entomology | BS | MS | PhD | |
| Forensic and Investigative Sciences | BS | | | |
| Department of Horticultural Sciences | | | | |
| Horticulture | BA, BS | MS, MAgr | PhD ³ | |
| Plant Breeding | | MS | PhD | |

Department of Nutrition and Food Science

| | | | |
|----------------------------------|----|----------|-----|
| Food Science and Technology | BS | MS, MAgr | PhD |
| Food Systems Industry Management | BS | | |
| Nutrition | BS | MS | PhD |

Department of Plant Pathology and Microbiology

| | | | |
|---------------------------|----|----|-----|
| Bioenvironmental Sciences | BS | | |
| Plant Pathology | | MS | PhD |

Department of Poultry Science

| | | | |
|-----------------|----|----------|-----|
| Poultry Science | BS | MS, MAgr | PhD |
|-----------------|----|----------|-----|

Department of Recreation, Park and Tourism Sciences

| | | | |
|---------------------------------------|----|------|-----|
| Natural Resources Development | | MNRD | |
| Recreation, Park and Tourism Sciences | BS | MS | PhD |
| Recreation and Youth Development | | MRYD | |

Department of Soil and Crop Sciences

| | | | |
|--------------------------------------|----|----|-----|
| Agronomy | | MS | PhD |
| Plant Breeding | | MS | PhD |
| Plant and Environmental Soil Science | BS | | |
| Soil Science | | MS | PhD |
| Turfgrass Science | BS | | |

Department of Wildlife and Fisheries Sciences

| | | | |
|---------------------------------|----|------|-----|
| Natural Resources Development | | MNRD | |
| Wildlife and Fisheries Sciences | BS | MS | PhD |
| Wildlife Science | | MWSC | |

- ¹ Also offered as joint program with Texas Tech University when offered by Distance Education.
- ² Joint Program with College of Education and Human Development. Degrees conferred in College of Agriculture and Life Sciences.
- ³ Also offered in cooperation with Texas A&M University–Kingsville.

College of Architecture

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|----------------------------|---------------|-----------|-----------|--------------|
| Department of Architecture | | | | |
| Architecture | | MS, MArch | PhD | |

Environmental Design Architectural Studies

Department of Construction Science

| | | | |
|-------------------------|----|----|--|
| Construction Science | BS | | |
| Construction Management | | MS | |

Department of Landscape Architecture and Urban Planning

| | | | |
|-------------------------------|-----|------|-----|
| Landscape Architecture | BLA | MLA | |
| Land and Property Development | | MLPD | |
| Urban and Regional Planning | BS | MUP | |
| Urban and Regional Science | | | PhD |

Department of Visualization

| | | | |
|---------------|----|---------|--|
| Visualization | BS | MS, MFA | |
|---------------|----|---------|--|

Mays Business School

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|-------------------------|---------------|---------|-----------|--------------|
| Analytics | | MS | | |
| Business | | MS | | |
| Business Administration | BBA | MBA | PhD | |

Department of Accounting

| | | | |
|------------|-----|----|--|
| Accounting | BBA | MS | |
|------------|-----|----|--|

Department of Finance

| | | | |
|--------------------------------|-----|-----|--|
| Finance | BBA | MS | |
| Financial Management | | MFM | |
| Land Economics and Real Estate | | MRE | |

Department of Information and Operations Management

| | | | |
|--------------------------------|-----|----|--|
| Management Information Systems | BBA | MS | |
| Supply Chain Management | BBA | | |

Department of Management

| | | | |
|----------------------------|-----|----|-----|
| Entrepreneurial Leadership | | MS | |
| Human Resource Management | | MS | |
| Management | BBA | | PhD |

Department of Marketing

| | | |
|-----------|-----|----|
| Marketing | BBA | MS |
|-----------|-----|----|

College of Dentistry

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|----------------|---------------|---------|-----------|--------------|
| Dentistry | | | | DDS |
| Oral Biology | | MS | PhD | |

Department of Biomedical Sciences

| |
|---------------------------------|
| Caruth School of Dental Hygiene |
| Dental Hygiene BS |

Department of Comprehensive Dentistry

Department of Diagnostic Sciences

Department of Endodontics

Department of Oral and Maxillofacial Surgery

Department of Orthodontics

Department of Pediatric Dentistry

Department of Periodontics

Department of Public Health Sciences

College of Education and Human Development

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|----------------|---------------|---------|-----------|--------------|
|----------------|---------------|---------|-----------|--------------|

Department of Educational Administration and Human Resource Development

| | | | | |
|----------------------------------------|----|---------|-----------------------|--|
| Educational Administration | | MS, MEd | PhD, EdD ¹ | |
| Educational Human Resource Development | | MS | PhD | |
| Human Resource Development | BS | | | |
| Technology Management | BS | | | |

Department of Educational Psychology

| | | | | |
|------------------------|--|---------|-----|--|
| Bilingual Education | | MS, MEd | | |
| Counseling Psychology | | | PhD | |
| Educational Psychology | | MS, MEd | PhD | |
| Educational Technology | | MEd | | |
| School Psychology | | | PhD | |

| | | | | |
|-------------------|--|---------|--|--|
| Special Education | | MS, MEd | | |
|-------------------|--|---------|--|--|

Department of Health and Kinesiology

| | | | | |
|-------------------|----|----|-----|--|
| Athletic Training | | MS | | |
| Community Health | BS | | | |
| Health | BS | | | |
| Health Education | | MS | PhD | |
| Kinesiology | BS | MS | PhD | |
| Sport Management | BS | MS | | |

Department of Teaching, Learning and Culture

| | | | | |
|----------------------------|----|----------------------|-----------------------|--|
| Curriculum and Instruction | | MS, MEd ² | PhD, EdD ¹ | |
| Interdisciplinary Studies | BS | | | |

- ¹ Also offered as a Cooperative Doctoral Program with Texas A&M International University.
- ² Also offered as a dual degree program with Qatar University.

College of Engineering

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|-------------------------------|---------------|---------|-----------|--------------|
| Architectural Engineering | BS | | | |
| Engineering | | MEngr | DEngr | |
| Interdisciplinary Engineering | BS | MS | PhD | |
| Safety Engineering | | MS | | |
| Systems Engineering | | MEngr | | |

Department of Aerospace Engineering

| | | | | |
|-----------------------|----|-----------|-----|--|
| Aerospace Engineering | BS | MS, MEngr | PhD | |
|-----------------------|----|-----------|-----|--|

Department of Biomedical Engineering

| | | | | |
|------------------------|----|-----------|-----|--|
| Biomedical Engineering | BS | MS, MEngr | PhD | |
|------------------------|----|-----------|-----|--|

Artie McFerrin Department of Chemical Engineering

| | | | | |
|----------------------|----|-----------|-----|--|
| Chemical Engineering | BS | MS, MEngr | PhD | |
|----------------------|----|-----------|-----|--|

Zachry Department of Civil and Environmental Engineering

| | | | | |
|---------------------------|----|-----------|-----|--|
| Civil Engineering | BS | MS, MEngr | PhD | |
| Environmental Engineering | BS | | | |

Department of Computer Science and Engineering

| | | | | |
|----------------------|----|-----------|-----|--|
| Computer Engineering | BS | MS, MEngr | PhD | |
|----------------------|----|-----------|-----|--|

| | | | |
|-------------------------------------------------------------------------|----|-----------|-----|
| Computer Science | BS | MS, MCS | PhD |
| Computing | BA | | |
| Department of Electrical and Computer Engineering | | | |
| Computer Engineering | BS | MS, MEngr | PhD |
| Electrical Engineering | BS | MS, MEngr | PhD |
| Department of Engineering Technology and Industrial Distribution | | | |
| Electronic Systems Engineering Technology | BS | | |
| Engineering Technology | | MS | |
| Industrial Distribution | BS | MID | |
| Manufacturing and Mechanical Engineering Technology | BS | | |
| Multidisciplinary Engineering Technology | BS | | |
| Technical Management | | METM | |
| Department of Industrial and Systems Engineering | | | |
| Engineering Systems Management | | MS | |
| Industrial Engineering | BS | MS, MEngr | PhD |
| Department of Materials Science and Engineering | | | |
| Materials Science and Engineering | BS | MS, MEngr | PhD |
| Department of Mechanical Engineering | | | |
| Mechanical Engineering | BS | MS, MEngr | PhD |
| Department of Nuclear Engineering | | | |
| Nuclear Engineering | BS | MS, MEngr | PhD |
| Department of Ocean Engineering | | | |
| Ocean Engineering | BS | MS, MEngr | PhD |
| Harold Vance Department of Petroleum Engineering | | | |
| Petroleum Engineering | BS | MS, MEngr | PhD |

College of Geosciences

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|-----------------------------------------------|---------------|---------|-----------|--------------|
| Environmental Geoscience | BS | | | |
| Geoscience | | MGsc | | |
| Department of Atmospheric Sciences | | | | |
| Atmospheric Sciences | | MS | PhD | |
| Meteorology | BS | | | |
| Department of Geography | | | | |
| Geographic Information Science and Technology | BS | | | |
| Geography | BS | MS | PhD | |
| Department of Geology and Geophysics | | | | |
| Geology | BA, BS | MS | PhD | |
| Geophysics | BS | MS | PhD | |
| Department of Oceanography | | | | |
| Ocean Science and Technology | | MOST | | |
| Oceanography | BS | MS | PhD | |

The Bush School of Government and Public Service

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|--------------------------------------------------------|---------------|---------|-----------|--------------|
| Department of International Affairs | | | | |
| International Affairs | | MIA | | |
| International Policy | | MIP | | |
| Department of Public Service and Administration | | | | |
| Public Service and Administration | | MPSA | | |

School of Law

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|-----------------------|---------------|-----------|-----------|--------------|
| Health Care Law | | JM | | |
| Intellectual Property | | LLM, MJur | | |
| Jurisprudence | | MJur | | |
| Law | | | | JD |
| Laws | | LLM | | |

College of Liberal Arts

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|---------------------------------------|---------------|---------|-----------|--------------|
| Women's and Gender Studies | BA | | | |
| Department of Anthropology | | | | |
| Anthropology | BA, BS | MA | PhD | |
| Maritime Archaeology and Conservation | | MS | | |

| | | | | |
|------------------------------------------------|--------|----|--|------------------|
| Department of Communication | | | | |
| Communication BA | | MA | | PhD |
| Telecommunication BA | BS | | | |
| Media Studies | | | | |
| Department of Economics | | | | |
| Economics | BA, BS | MS | | PhD |
| Department of English | | | | |
| English | BA | MA | | PhD |
| Department of Hispanic Studies | | | | |
| Hispanic Studies | | MA | | PhD ¹ |
| Spanish | BA | | | |
| Department of History | | | | |
| History | BA | MA | | PhD |
| Department of International Studies | | | | |
| Classics | BA | | | |
| International Studies | BA | | | |
| Modern Languages | BA | | | |
| Department of Performance Studies | | | | |
| Performance Studies | BA | MA | | |
| Department of Philosophy and Humanities | | | | |
| Philosophy | BA | MA | | PhD |
| Department of Political Science | | | | |
| Political Science | BA, BS | MA | | PhD |
| Department of Psychological and Brain Sciences | | | | |
| Clinical Psychology | | | | PhD |
| Industrial/ Organizational Psychology | | | | PhD |
| Psychology | BA, BS | MS | | PhD |
| Department of Sociology | | | | |
| Sociology | BA, BS | MS | | PhD |

¹ In cooperation with Texas A&M International University, Texas A&M University–Corpus Christi and Texas A&M University–Kingsville.

College of Medicine

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|-----------------------------------------|---------------|---------|-----------|--------------|
| Education for Health Care Professionals | | MS | | |
| Medical Sciences | | MS | PhD | |
| Medicine | | | | MD |

College of Nursing

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|---------------------------|---------------|---------|-----------|--------------|
| Family Nurse Practitioner | | MSN | | |
| Forensic Nursing | | MSN | | |
| Nursing | BSN | | | |
| Nursing Education | | MSN | | |

Irma Lerma Rangel College of Pharmacy

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|---------------------------------------|---------------|---------|-----------|--------------|
| Pharmacy | | | | PharmD |
| Department of Pharmaceutical Sciences | | | | |
| Department of Pharmacy Practice | | | | |

School of Public Health

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|--------------------------------------------------------------|---------------|---------|-----------|--------------|
| Epidemiology and Environmental Health | | | DrPH | |
| Health Administration | | MHA | | |
| Health Policy and Management | | MSPH | | |
| Health Services Research | | | PhD | |
| Occupational Safety and Health | | MPH | | |
| Public Health | BS | | | |
| Department of Epidemiology and Biostatistics | | | | |
| Biostatistics | | MPH | | |
| Epidemiology | | MPH | | |
| Department of Environmental and Occupational Health | | | | |
| Environmental Health | | MPH | | |
| Department of Health Policy and Management | | | | |
| Health Policy and Management | | MPH | | |
| Department of Health Promotion and Community Health Sciences | | | | |
| Health Promotion and Community Health Sciences | | MPH | DrPH | |

College of Science

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|----------------------------|---------------|---------|-----------|--------------|
| Department of Biology | | | | |
| Biology | BA, BS | MS | PhD | |
| Microbiology | BS | MS | PhD | |
| Molecular and Cell Biology | BS | | | |

| | | | |
|--------------------------------------------|--------|----|-----|
| Zoology | BS | | |
| Department of Chemistry | | | |
| Chemistry | BA, BS | MS | PhD |
| Department of Mathematics | | | |
| Applied Mathematical Sciences | BS | | |
| Mathematics | BA, BS | MS | PhD |
| Quantitative Finance | | MS | |
| Department of Physics and Astronomy | | | |
| Astronomy | | MS | PhD |
| Physics | BA, BS | MS | PhD |
| Applied Physics | | | PhD |
| Department of Statistics | | | |
| Statistics | BS | MS | PhD |

College of Veterinary Medicine and Biomedical Sciences

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|----------------------------------------------------------------|---------------|---------|-----------|--------------|
| Biomedical Sciences | BS | MS | PhD | |
| Science and Technology Journalism | | MS | | |
| Veterinary Medicine | | | | DVM |
| Department of Veterinary Integrative Biosciences | | | | |
| Veterinary Public Health - Epidemiology | | MS | | |
| Department of Veterinary Large Animal Clinical Sciences | | | | |
| Department of Veterinary Pathobiology | | | | |
| Department of Veterinary Physiology and Pharmacology | | | | |
| Department of Veterinary Small Animal Clinical Sciences | | | | |

Texas A&M University at Galveston

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|--------------------------------------|---------------|-----------------|------------------|--------------|
| University Studies | BA, BS | | | |
| Department of Liberal Studies | | | | |
| Maritime Studies | BA | | | |
| Department of Marine Biology | | | | |
| Marine Biology | BS | MS ¹ | PhD ¹ | |
| Marine Fisheries | BS | | | |

Department of Marine Engineering Technology

| | | | |
|-------------------------------|----|--|--|
| Marine Engineering Technology | BS | | |
|-------------------------------|----|--|--|

Department of Marine Sciences

| | | | |
|-----------------------------|--|------|--|
| Marine Resources Management | | MMRM | |
|-----------------------------|--|------|--|

| | | | |
|-----------------|----|--|--|
| Marine Sciences | BS | | |
|-----------------|----|--|--|

| | | | |
|-----------------------------|----|--|--|
| Ocean and Coastal Resources | BS | | |
|-----------------------------|----|--|--|

Department of Maritime Business Administration

| | | | |
|-------------------------|----|--|--|
| Maritime Administration | BS | | |
|-------------------------|----|--|--|

| | | | |
|---------------------------------------|--|------|--|
| Maritime Administration and Logistics | | MMAL | |
|---------------------------------------|--|------|--|

Department of Maritime Systems Engineering

Department of Maritime Transportation

| | | | |
|-----------------------|----|--|--|
| Marine Transportation | BS | | |
|-----------------------|----|--|--|

Division of Foundational Sciences

- ¹ Joint program between Texas A&M University, Texas A&M University at Galveston and Texas A&M University–Corpus Christi.

Texas A&M University at Qatar

| Degree Program | Baccalaureate | Masters | Doctorate | Professional |
|-------------------------------|---------------|-----------|-----------|--------------|
| College of Engineering | | | | |
| Chemical Engineering | BS | MS, MEngr | PhD | |
| Electrical Engineering | BS | | | |
| Mechanical Engineering | BS | | | |
| Petroleum Engineering | BS | | | |

Degree Programs Via Distance Education

Texas A&M University currently offers the following programs by distance education:

Undergraduate Degree Program

- Bachelor of Science in Nursing (BSN) in Nursing

Graduate Degree Programs

- Doctor of Education (EdD) in Agricultural Education
- Doctor of Education (EdD) in Curriculum and Instruction
- Doctor of Philosophy (PhD) in Plant Breeding
- Master of Agriculture (MAgr) in Agricultural Development

- Master of Agriculture (MAgr) in Poultry Science
- Master of Education (MEd) in Bilingual Education
- Master of Education (MEd) in Curriculum and Instruction
- Master of Education (MEd) in Educational Administration
- Master of Education (MEd) in Educational Psychology
- Master of Education (MEd) in Educational Technology
- Master of Education (MEd) in Special Education
- Master of Engineering (MEng) in Aerospace
- Master of Engineering (MEng) in Biological and Agricultural Engineering
- Master of Engineering (MEng) in Computer Engineering
- Master of Engineering (MEng) in Electrical Engineering
- Master of Engineering (MEng) in Engineering
- Master of Engineering (MEng) in Industrial Engineering
- Master of Engineering (MEng) in Mechanical Engineering
- Master of Engineering (MEng) in Petroleum Engineering
- Master of Engineering Technical Management (METM) in Technical Management
- Master of Geoscience (MGSC) in Geoscience
- Master of Industrial Distribution (MID) in Industrial Distribution
- Master of Jurisprudence (MJur) in Jurisprudence
- Master of Laws (LLM) in Laws
- Master of Maritime Administration and Logistics (MMAL) in Maritime Administration and Logistics
- Master of Natural Resource Development (MNRD) in Natural Resource Development
- Master of Public Health (MPH) in Epidemiology
- Master of Public Service and Administration (MPSA) in Public Service and Administration
- Master of Recreation and Youth Development (MRYD) in Recreation and Youth Development
- Master of Science (MS) in Agricultural Systems Management
- Master of Science (MS) in Analytics
- Master of Science (MS) in Bilingual Education
- Master of Science (MS) in Education for Health Care Professionals
- Master of Science (MS) in Educational Human Resource Development
- Master of Science (MS) in Energy
- Master of Science (MS) in Engineering Systems Management
- Master of Science (MS) in Health Education
- Master of Science (MS) in Mathematics
- Master of Science (MS) in Plant Breeding
- Master of Science (MS) in Safety Engineering
- Master of Science (MS) in Special Education
- Master of Science (MS) in Sport Management
- Master of Science (MS) in Statistics
- Master of Science in Nursing (MSN) in Family Nurse Practitioner
- Master of Science in Nursing (MSN) in Forensic Nursing
- Master of Science in Nursing (MSN) in Nursing Education
- Master of Wildlife Science (MWSC) in Wildlife Science

A limited number of graduate certificate programs are available by distance education. Please review them here (p. 1361).

The delivery platform differs among these programs. Most are available 100% online, some are web-supported with interactive video and others require periodic campus visits. The delivery platform in most programs changes depending on the course/program content, needs of the students and their geographic locations. Students should carefully consider distance education and address any specific questions to the department offering the program of interest.

Only a student who is admitted to Texas A&M University may enroll in these distance education programs and the associated courses. A student wishing to enroll in any of the distance education programs must be admitted as a degree-seeking graduate student or as a post-baccalaureate non-degree seeking student. Please see <http://admissions.tamu.edu> for graduate admissions information.

A student may take up to 12 hours in non-degree-seeking post-baccalaureate status and apply these hours to a master's program with the approval of the student's advisory committee, the head of the department (or Chair of the Intercollegiate Faculty, if appropriate), and the Office of Graduate and Professional Studies if all admission requirements to the selected master's program are fulfilled. Courses offered for extension credit may not be used on the student's degree plan. Post-baccalaureate non-degree status does not establish eligibility for admission to degree-seeking status.

Texas A&M University provides students pursuing a graduate degree by distance a wide variety of student support services, including access to library resources, advising, technology support and course materials acquisition through the online bookstore. A complete listing of services, degree program descriptions, appropriate points of contact within each program, and costs are available through the distance education website at <http://distance.tamu.edu>. Additional distance education programs are in development. Interested students should check the website periodically for updates. Students should contact the department offering the program for any questions.

State Authorization

State authorization allows Texas A&M University to offer educational opportunities to students among other states and nationwide.

National Council for State Authorization Reciprocity Agreements (NC-SARA)

Texas was approved as a SARA state in 2015, and is administered by the Southern (<https://www.sreb.org>) Regional Education Board (SREB.) (<https://www.sreb.org>) "The State Authorization Reciprocity Agreement (<http://nc-sara.org>) is a voluntary agreement among its member states and U.S. territories that establishes comparable national standards for interstate offering of postsecondary distance-education courses and programs. It is intended to make it easier for students to take online courses offered by postsecondary institutions based in another state." - NC-SARA

Combined Programs

Texas A&M University currently offers the following combined master's programs:

- Master of Architecture/Master of Urban Planning
- Master of Land and Property Development/Master of Architecture
- Master of Land and Property Development/Master of Urban Planning
- Master of Land and Property Development/Master Science in Construction Management

- Master of Land and Property Development/Master of Real Estate
- Master of Science in Nutrition and Master of Science in Kinesiology
- Master of International Affairs in International Affairs and Master of Public Health in Health Promotion and Community Health Sciences
- Master of International Affairs in International Affairs and Master of Public Health in Health Policy and Management

A combined master's program represents two master's degrees that are pursued and awarded simultaneously. Combined degree programs may allow a shorter time for completion due to the "double-counting" of some coursework. Combined master's programs must be approved as defined by the University's Curricular Processes 11.99.99.M0.01 (<http://rules-saps.tamu.edu/PDFs/11.99.99.M0.01.pdf>).

Students should declare their intentions to enroll in combined master's programs at the time of application to their graduate studies or early in their education process. This will ensure the maximum benefit from a combined master's program.

Graduate Certificate Programs

Graduate Certificate Programs

- Adult Education Certificate (p. 590) ¹
- Advanced International Affairs Certificate (p. 991) ¹
- Advanced Pedagogy in Agriculture Certificate (p. 188) ¹
- Africana Studies Certificate (p. 1023)
- Agriculture eLearning Development Certificate (p. 189) ¹
- Analog and Mixed-Signal Integrated Circuit Design Certificate (p. 817) ¹
- Analytics Certificate (p. 524)
- Applied Behavior Analysis Certificate (p. 630) ¹
- Applied Statistics Certificate (p. 1321) ¹
- Business Data Analytics Certificate (p. 491)
- Business Intelligence and Analytics Certificate (p. 508)
- Business Management Certificate (p. 491)
- College Teaching Certificate (p. 591)
- Community Development Certificate (p. 378)
- Computational Sciences Certificate (p. 1229)
- Conservation Training Certificate (p. 1040)
- Corrosion Science and Engineering Certificate (p. 857)
- Cybersecurity Engineering Certificate (p. 706) ¹
- Dietetic Internship Certificate (p. 337)
- Digital Humanities Certificate (p. 144)
- Education for Health Care Professionals Certificate (p. 1180) ¹
- Education and Social Sciences Advanced Research Methods (ARM) Certificate (p. 555)
- Energy Certificate (p. 145) ¹
- Engineering Concept, Creation, and Commercialization Certificate (p. 707) ¹
- Engineering Project Management Certificate (p. 707)
- Engineering Therapeutics Manufacturing Certificate (p. 749)
- Entrepreneurship Certificate (p. 521)
- Environmental Hazard Management Certificate (p. 428)
- Extension Education Certificate (p. 189) ¹
- Facility Management Certificate (p. 430)
- Film and Media Studies Certificate (p. 1024)
- Finance Certificate (p. 491)
- Food Safety Certificate (p. 228)
- Forensic Healthcare Certificate (p. 1194) ¹
- Geographic Information Science (GIS) Certificate (p. 146) ¹
- Global Health Certificate (p. 1227)
- Health Coaching for Chronic Disease Prevention and Management Certificate (p. 1228) ¹
- Health Systems and Design Certificate (p. 146)
- Health Systems Management Certificate (p. 1225)
- Historic Preservation Certificate (p. 445)
- Homeland Security Certificate (p. 1010) ¹
- Industrial Data Analytics Certificate (p. 843) ¹
- Industrial/Organizational Psychology Certificate (p. 1145)
- International Agriculture Certificate (p. 189) ¹
- International Business (Mays MBA Students Only) Certificate (p. 491)
- International Business (Mays MS Students Only) Certificate (p. 492)
- International Communication and Public Diplomacy Certificate (p. 1051)
- International Petroleum Management Certificate (p. 147)
- Latino Mental Health Certificate (p. 630)
- Latino/a and Mexican American Studies Certificate (p. 1025)
- Leadership Education, Theory and Practice Certificate (p. 191) ¹
- Marketing Certificate (p. 492)
- Materials, Informatics and Design Certificate (p. 858)
- Maternal and Child Health Certificate (p. 1222)
- Meat Science Certificate (p. 228)
- Military Land Sustainability Certificate (p. 428) ¹
- National Security Affairs Certificate (p. 978)
- Nonprofit Management Certificate (p. 1011) ¹
- Nuclear Security Certificate (p. 888) ¹
- Ocean Observing Systems Certificate (p. 977)
- Petroleum Geoscience Certificate (p. 964)
- Prevention Science Certificate (p. 147)
- Public Health Certificate (p. 1215) ¹
- Public Management Certificate (p. 1011) ¹
- Quality Engineering for Regulated Medical Technologies Certificate (p. 736)
- Regulatory Science in Food Systems Certificate (p. 411) ¹
- Remote Sensing (RS) Certificate (p. 148)
- Safety Engineering Certificate (p. 707) ¹
- Science, Technology, Engineering and Mathematics (STEM) Education Certificate (p. 682) ¹
- Space Life Sciences (p. 148)
- Supply Chain and Operations Certificate (p. 492)
- Sustainable Urbanism Certificate (p. 468)
- Transportation Planning Certificate (p. 148)
- Vector Biology and Vector-Borne Disease Response in Human and Animal Systems Certificate (p. 289)
- Women's and Gender Studies Certificate (p. 1025)

Graduate Clinical Certificate Programs

- Advanced Education in General Dentistry Certificate (p. 539)
- Dental Public Health Certificate (p. 554)

- Endodontics Certificate (p. 544)
- Oral and Maxillofacial Surgery Certificate (p. 546)
- Oral and Maxillofacial Pathology Certificate (p. 542)
- Oral and Maxillofacial Radiology Certificate (p. 543)
- Orthodontics Certificate (p. 548)
- Pediatric Dentistry Certificate (p. 550)
- Periodontics Certificate (p. 552)
- Prosthodontics Certificate (p. 540)

¹ Offered via online Distance Education.

A graduate certificate program represents an emphasis area within a particular field or it could be interdisciplinary and involve several fields. Other certificate programs may exist in the various colleges or schools. Inquiries should be addressed to these colleges. For more information on graduate certificate programs, please visit the Office of the Registrar (<http://registrar.tamu.edu/Our-Services/Curricular-Services/Curricular-Approvals/Program-Approvals/Approved-Certificate-Programs>) website.

FACULTY

Faculty

Abanov, Artem G, Associate Professor
Physics & Astronomy
PHD, Texas A&M University, 1998

Abbey, Ian Issara, Lecturer
Liberal Studies
PHD, Texas A&M University, 2017

Abbey, James D, Assistant Professor
Information & Operations Mgmt
PHD, The Pennsylvania State University, 2013

Abbott Jr, Elton D, Associate Professor of the Practice
Architecture
PHD, Texas A&M University, 1983

Abdalla, Ahmed A, Associate Professor
Texas A&M University at Qatar
PHD, North Carolina State University, 2001

Abdel Salam, Noha M, Clinical Assistant Professor
Public Health Sciences
DDS, Loma Linda University, 2008

Abdel-Wahab, Ahmed I, Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 2003

Abdel-Wahab, Ahmed I, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2003

Abedi Mashhadimighani, Sara,
Civil & Environmental Engineering
PHD, University of Southern California, 2012

Abedi Mashhadimighani, Sara, Assistant Professor
Petroleum Engineering
PHD, University of Southern California, 2012

Abraham, Celeste M, Clinical Associate Professor
Periodontics
DDS, Howard University, 1988

Abu Baker, Asim, Clinical Professor
College of Pharmacy
PHARMD, Albany College of Pharmacy, 2003

Abu-Rub, Haithem A, Professor
Texas A&M University at Qatar
PHD, Gdansk University of Technology, Poland, 1995

Acero-Schertzer Carmen, Instructional Assistant Professor
Foundational Sciences
PHD, University of Miami, 1996

Acosta, Sandra T, Associate Professor
Educational Psychology
PHD, Texas A&M University, 2010

Acuff, Gary R, Professor
Nutrition & Food Science
PHD, Texas A&M University, 1985

Adams, Leslie G, Senior Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1968
DVM, Texas A&M University, 1964

Adams, Marvin L, Professor
Nuclear Engineering
PHD, University of Michigan - Ann Arbor, 1986

Adams, Rae A, Clinical Assistant Professor
College of Medicine
MD, Texas A&M Health Science Center College of Medicine, 2008

Adams, Terry B, Adjunct Assistant Professor
Orthodontics
DDS, DDS, 1973 U Missouri, 1973

Adelman, Zachary N, Professor
Entomology
PHD, Colorado State University Fort Collins, 2000

Adesanya, Patricia M, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M College of Dentistry, 2010

Agarwal, Girish S, Professor
Biological & Agricultural Eng
PHD, University of Rochester, 1969

Agnolet, Glenn, Professor
Physics & Astronomy
PHD, Cornell University, 1983

Agrawal, Anupam, Associate Professor
Information & Operations Mgmt
PHD, INSEAD France, 2008

Agrawal, Rakesh, Visiting Professor
College of Engineering
PHD, Massachusetts Institute of Technology, 1980

Ahdieh, Robert,
School of Law
JD, Yale Law School, 1997

Ahmed, Anwer S, Professor
Accounting
PHD, University of Rochester, 1992

Ahmed, Beena, Assistant Professor
Texas A&M University at Qatar
PHD, University of New South, Wales, Sydney, Australia, 2004

Ahmed, Karim E, Assistant Professor
Nuclear Engineering
PHD, Purdue University, 2015

Ahmed, Sarker T, Instructional Assistant Professor
Computer Science & Engineering
PHD, Texas A&M University, 2016

Ahmed, Shehab, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2007

Ahn, Changbum R, Associate Professor
Construction Science
PHD, University of Illinois at Urbana-Champaign, 2012

Ahuero, Alice Watson, Instructional Assistant Professor
College of Medicine
MD, Baylor College of Medicine, 2004

Aitani, Koichiro, Associate Professor
Architecture
PHD, Kyushu University, 2015
MAR, Virginia Polytechnic Institute and State University, 1997

Aitkenhead, Jacqueline A, Associate Professor
Soil & Crop Sciences
PHD, University of New Hampshire, 2000

Akbulut, Mustafa, Associate Professor
Chemical Engineering
PHD, University of California, Santa Barbara, 2007

Akbulut, Mustafa, Associate Professor
Materials Science & Engr
PHD, University of California, Santa Barbara, 2007

Akimov, Alexey, Assistant Professor
Physics & Astronomy
PHD, Moscow Institute of Technology, 2003

Akinleye, Akintayo A, Lab Instructor
Biology
MD, Obafemi Awolowo University, Nigeria, 2011

Akkutlu, Ibrahim Y, Professor
Petroleum Engineering
PHD, University of Southern California, 2002

Akleman, Derya G, Instructional Associate Professor
Statistics
PHD, Texas A&M University, 1996

Akleman, Ergun, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1992

Akleman, Ergun, Professor
Visualization
PHD, Georgia Institute of Technology, 1992

Al-Hashimi, Mohammed, Research Associate Professor
Texas A&M University at Qatar
PHD, Queen Mary Westfield College, University of London, 2007

Al-Mohannadi, Dhabia, Assistant Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2019

Al-Rawashdeh, Ma'moun, Assistant Professor
Texas A&M University at Qatar
PHD, Technical University of Eindhoven, Netherlands, 2013

Alajlouni, Khaldoun F, Adjunct Professor
Comprehensive Dentistry
DDS, Jordan University of Science and Technology, Irbid Jordan, 1998

Alaniz, Robert C,
College of Medicine
PHD, University of Washington, 2015

Alexander, Joyce M, Professor
Educational Psychology
PHD, University of Georgia, 1992

Alexander, Lisa T, Professor
School of Law
JD, Columbia University, 2002

Alexander, Michael B, Lab Instructor
Biology
PHD, Texas A&M University, 2014

Alexander, Steve K, Lecturer
Marine Science
PHD, Louisiana State University, 1976

Alexander-Packard, Gerianne, Professor
Psychological & Brain Sciences
PHD, McGill University, 1991

Alfred, Mary V, Professor
Educ Admn & Human Resource Dev
PHD, University of Texas, 1995

Alfriend III, Kyle T, Distinguished Professor
Aerospace Engineering
PHD, Virginia Polytechnic Institute and State University, 1967

Alge, Daniel L, Assistant Professor
Biomedical Engineering
PHD, Purdue University, 2010

Alge, Daniel L, Assistant Professor
Materials Science & Engr
PHD, Purdue University, 2010

Ali, Ahmed K, Assistant Professor
Architecture
PHD, Virginia Polytechnic Institute, 2012

Alipour, Kent K., Visiting Assistant Professor
Management
PHD, The Pennsylvania State University, 2018

Alkon, Cynthia J, Professor
School of Law
JD, University of California, 1990

Allaire, Douglas L, Assistant Professor
Mechanical Engineering
PHD, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 2009

Allen, David, Senior Lecturer and Director and Department Advisor of
graduate and undergraduate programs
Ocean Engineering
PHD, Texas A&M University, 1980

Allen, George H, Assistant Professor
Geography
PHD, University of North Carolina at Chapel Hill, 2017

Allen, Gregg C, Instructional Associate Professor
College of Medicine
PHD, Texas A&M University, 2001

Allen, Roland E, Professor
Physics & Astronomy
PHD, University of Texas at Austin, 1969

Allen, Sarah P, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University System Baylor College of Dentistry, 2010

Allison, Mary, Instructional Assistant Professor
International Studies
PHD, University of Wisconsin, Madison, 2014

Allred, Clinton D, Associate Professor
Nutrition & Food Science
PHD, University of Illinois at Urbana Champaign, 2002

Alnuweiri, Hussein, Professor
Texas A&M University at Qatar
PHD, University of Southern California, 1989

Alonzo, Armando C, Associate Professor
History
PHD, Indiana University, 1994

Alonzo, Joy P, Clinical Assistant Professor
College of Pharmacy
PHARM D, Howard University, 2010

Alonzo, Juan J, Associate Professor
English
PHD, University of Texas, 2003

Alpini, Gianfranco, Distinguished Professor
College of Medicine
PHD, University of Rome, 1984

Alpini, Gianfranco D, Distinguished Professor
College of Medicine
PHD, University of Rome, 1984

Alton, Stephen R, Professor
School of Law
JD, The University of Texas School of Law, 1981

Alvarado, Christine Z, Professor
Poultry Science
PHD, Texas A&M University, 2001

Alvarado, Jorge L, Professor
Eng Tech & Ind Distribution
PHD, University of Illinois, 2004

Alvarado, Jorge L, Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Illinois, 2004

Alvarado-Bremer, Jaime, Professor
Marine Biology
PHD, University of Toronto, 1994

Alvard, Michael S, Associate Professor
Anthropology
PHD, University of New Mexico, 1993

Alvarez, Andrea, Instructional Assistant Professor
Health & Kinesiology
MFA, Case Western Reserve University, 2016

Alvarez, Martha H, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Instituto de Ciencias de la Salud (CES), Medellin, Colombia, 1997

Alyafei, Nayef M, Assistant Professor
Texas A&M University at Qatar
PHD, Imperial College London, United Kingdom, 2015

Alyismail, Hamed, Assistant Professor
College of Pharmacy
PHD, Okayama University, Japan, 2007

Amani, Mahmood, Associate Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 1997

Amato, Nancy M, Professor
Computer Science & Engineering
PHD, University of Illinois, 1995

Amini, Noushin, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2011

Amiri, Ahmad, Visiting Assistant Professor
Mechanical Engineering
PHD, University of Malaya, 2017
PHD, University of Malaya, 2015

Amon, Rainer, Professor
Marine Science
PHD, University of Texas at Austin, 1995

Amrein, Hubert O, Professor
College of Medicine
PHD, University of Zürich, 1989

An, Yonghong, Associate Professor
Economics
PHD, John Hopkins University, 2011

Anand, Nagamangala, Professor
Mechanical Engineering
PHD, Purdue University, 1983

Anders, Katherine C, Assistant Professor
TAMU Libraries
PHD, University of Nevada, 2014

Anderson, Brian A, Assistant Professor
Psychological & Brain Sciences
PHD, John Hopkins University, 2014

Anderson, David, Visiting Professor
Agricultural Economics
PHD, Texas A&M University, 1994

Anderson, Sammy K, Executive Associate Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 1993

Anderson, Terry H, Professor
History
PHD, Indiana University, 1978

Andersson, Leif B, Professor
Vet Integrative Biosciences
PHD, Swedish University of Agricultural Sciences, Uppsala, 1984

Andreassen, Mayet Maria, Lecturer
Visualization
MFA, School of Animation and Visual Effects, 2006

Andrews-Polymenis, Helene, Professor
College of Medicine
DVM, Texas A&M University, 2001
PHD, Tufts University, 1999

Andrienko, Daniil Aleksandrovich, Assistant Professor
Aerospace Engineering
PHD, Moscow Institute of Physics and Technology, 2014
PHD, Wright State University, 2014

Andruzzi, Melissa N,
Vet Small Animal Clinical Sc
DVM, University of Illinois, 2017

Angelus, Alexandar, Assistant Professor
Information & Operations Mgmt
PHD, Stanford University, 1997

Anieto, Ugochukwu Obiakornobi, Instructional Assistant Professor
College of Science
PHD, University of North Texas, 2014

Anis, Ayal, Associate Professor
Marine Science
PHD, Oregon State University, 1993

Annapareddy, Narasimha, Professor
Electrical & Computer Eng
PHD, University of Illinois at Urbana-Champaign, 1990

Anshevich, Michael V, Professor
Mathematics
PHD, University of California, Berkeley, 2000

Antao, Dion S, Assistant Professor
Mechanical Engineering
PHD, Drexel University, 2013

Antony Babu, Sanjay, Assistant Professor
Plant Pathology & Microbiology
PHD, Newcastle University, 2018

Apostolopoulos, Yiorgos, Associate Professor
Health & Kinesiology
PHD, University of Connecticut, 1994

Appiah, Bernard, Assistant Professor
Environmental & Occptnl Hlth
DrPH, Texas A&M Health Science Center School of Public Health, 2013

Applegate, Brian E, Associate Professor
Biomedical Engineering
PHD, Ohio State University, 2000

Aprahamian, Hrayr, Assistant Professor
Industrial & Systems Eng
PHD, Virginia Tech, 2018

Aramayo, Rodolfo A, Associate Professor
Biology
PHD, University of Georgia, 1992

Archer, Gregory, Associate Professor & Extension Specialist
Poultry Science
PHD, Texas A&M University, 2005

Archer, Holli R, Assistant Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2013

Ardani, Samira, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2016

Arenas, Angela M, Assistant Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2007
DVM, La Salle University, Colombia, 2002

Arizpe, Victor, Professor
Hispanic Studies
PHD, University of Michigan Ann Arbor, 1982

Armitage Chan, Anna R, Associate Professor
Marine Biology
PHD, University of California, Los Angeles, 2003

Armstrong, Carisa L, Clinical Associate Professor
Health & Kinesiology
MFA, Case Western Reserve University, 2002

Armstrong, Kristin N, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of Missouri, 2017

Arnold, Carolyn E, Associate Professor
Vet Large Animal Clinical Sc
DVM, Michigan State University, 1998

Arnold, Michael A, Professor
Horticultural Sciences
PHD, North Carolina State University, 1990

Aronson, Carl, Instructional Assistant Professor
Foundational Sciences
PHD, University of Michigan - Ann Arbor, 1999

Arosh, Joe A, Professor
Vet Integrative Biosciences
PHD, Universite Laval, 2004

Arosh, Sakhila B, Associate Professor
Vet Integrative Biosciences
PHD, University of Madras, 2002

Arreola-Risa, Antonio, Associate Professor
Information & Operations Mgmt
PHD, Stanford University, 1989

Arroyave, Raymundo, Professor (courtesy appointment)
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 2004

Arroyave, Raymundo, Professor
Materials Science & Engr
PHD, Massachusetts Inst of Technology, 2004

Arthur Jr, Winfred E, Professor
Psychological & Brain Sciences
PHD, The University of Akron, 1988

Asadi, Amir, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Manitoba, 2013

Asadi, Amir, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Manitoba, 2013

Asadi, Amir, Assistant Professor
Materials Science & Engr
PHD, University of Manitoba, 2013

Ashley III, Frank B, Senior Professor
Public Service & Administration
EDD, The University of Alabama, 1986

Ashley, Candice R, Lecturer
Teaching, Learning & Culture
PHD, Capella University, 2014

Athrey, Giridhar N, Assistant Professor
Poultry Science
PHD, University of Louisiana at Lafayette, 2009

Athreya, Sheela, Associate Professor
Anthropology
PHD, Washington University in St. Louis, 2003

Atif, Morad R, Professor of the Practice
College of Engineering
PHD, Texas A&M University, 1992

Atli, Kadri Can, Research Assistant Professor
Materials Science & Engr
PHD, Texas A&M University, 2011

Atoba, Olabisi, Instructional Assistant Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 2017

Atoba, Olabisi, Instructional Assistant Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 2017

Aubeny, Charles P, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1992

Aufderheide, Karl J, Associate Professor
Biology
PHD, University of Minnesota, 1974

Augsburger, Robert A, Clinical Assistant Professor
Endodontics
DDS, University of California-San Francisco, 1973

Autenrieth, Robin L, Professor
Civil & Environmental Engineering
PHD, Clarkson University, 1986

Authement, Renae S, Clinical Assistant Professor
College of Nursing
DNP, Loyola University, 2015

Avery, Andrew N, Clinical Professor
College of Medicine
MD, University of Texas Medical Branch at Galveston, 1973

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Soil & Crop Sciences
PHD, Texas A&M University College Station, 2018
PHD, Texas A&M University, 2003

Ayari, Salah, Instructional Associate Professor
International Studies
PHD, University of Minnesota, 1998

Ayres, Nicola M, Senior Lecturer
Biochemistry & Biophysics
PHD, University of Nebraska - Lincoln, 1987

Ayres, Pamela S, Professor
School of Law
JD, BAYLOR UNIVERSITY, 1988

Aziz, Sahar F, Professor
School of Law
JD, The University of Texas School of Law, 2004

Bach, Damon R, Lecturer
History
PHD, Texas A&M University, 2013

Baek, Eunkyeng, Assistant Professor
Educational Psychology
PHD, University of South Florida, 2015

Baer, Judith A, Professor Emerita
Political Science
PHD, University of Chicago, 1974

Baetge, Claire C, Clinical Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2014

Baetge, Courtney L, Clinical Assistant Professor
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Bagavathiannan, Muthukumar V, Assistant Professor
Soil & Crop Sciences
PHD, University of Manitoba, Canada, 2010

Bagher, Pooneh, Assistant Professor
College of Medicine
PHD, Cornell University, 2007

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Bailey Michael, Lecturer
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Bailey, Christopher A, Professor
Poultry Science
PHD, Texas A&M University, 1982

Bailey, Everett M, Professor
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PHD, Iowa State University, 1968
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Bailey, Krista J, Clinical Associate Professor
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Bake, Shameena, Research Assistant Professor
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PHD, University of Kerala, 2001

Balawi, Shadi Omar, Instructional Associate Professor
Mechanical Engineering
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Balbuena, Perla B, Professor
Chemical Engineering
PHD, University of Texas, 1996

Balbuena, Perla B, Professor
Materials Science & Engr
PHD, University of Texas, 1996

Baldauf, Jack G, Professor
Oceanography
PHD, University of California, Berkeley, 1985

Bales, Stephen E, Associate Professor
TAMU Libraries
PHD, University of Tennessee, Knoxville, 2008

Balester, Valerie M, Professor
English
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Baletka, Dawn M, Instructional Assistant Professor
Health & Kinesiology
PHD, Sam Houston State University, 2006

Ball III, James R, Assistant Professor
Performance Studies
PHD, New York University, 2012

Ballard, Danny J, Adjunct Professor
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PHD, Oklahoma State University, 1982

Ballouli, Khalid W, Adjunct Assistant Professor
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PHD, Texas A&M University, 2011

Balog Jr, Robert S, Associate Professor
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Balog Jr, Robert S, Associate Professor
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PHD, University of Illinois, 2006

Balta, Joseph B, Visiting Assistant Professor
Geology & Geophysics
PHD, California Institute of Technology, 2010

Baltazar, Juan Carlos, Associate Professor
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Baltensperger, David D, Professor
Soil & Crop Sciences
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Banerjee, Amarnath P, Professor
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Banerjee, Debjyoti, Professor
Mechanical Engineering
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Banerjee, Debjyoti, Professor
Petroleum Engineering
PHD, University of California, Los Angeles, 1999

Banerjee, Sarbajit, Professor
Chemistry
PHD, State University of New York at Stony Brook, 2004

Banerjee, Sarbajit, Professor
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PHD, State University of New York at Stony Brook, 2004

Bankaitis, Vytas A, Distinguished Professor
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PHD, University of North Carolina, 1984

Banks, Margaret K, Distinguished Professor
Civil & Environmental Engineering
PHD, Duke University, 1989

Bankston, Sarah K, Assistant Professor
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Bapst, David W, Lecturer
Geology & Geophysics
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Barboza, Peregrine S, Professor
Wildlife & Fisheries Sciences
PHD, University of New England, 1991

Bardenhagen, Eric K, Associate Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 2011
MLA, Texas A&M University, 1999

Bare, Daniel R, Assistant Professor
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PHD, Texas A&M University, 2018

Barge, James K, Professor
Communication
PHD, University of Kansas, 1985

Barling, Kerry, Lecturer
Vet Large Animal Clinical Sc
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DVM, Texas A&M University, 1987

Barnes, Katherine Hirose, Clinical Assistant Professor
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Barnes, Wayne R, Professor
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Barnett, Brandon W, Adjunct Professor
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LLM, The George Washington University Law School, 2012
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Barondeau, David P, Associate Professor
Chemistry
PHD, Texas A&M University, 1996

Barr, Andrew C, Assistant Professor
Economics
PHD, University of Virginia, 2015

Barrett, Julie, Lecturer
Teaching, Learning & Culture
EDD, Sam Houston State University, 2013

Barrick, Murray R, University Distinguished Professor
Management
PHD, University of Akron, 1988

Barrington, Craig M, Adjunct Assistant Professor
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Barrington, Jennifer J, Clinical Associate Professor
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Barrufet, Maria A, Professor
Petroleum Engineering
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Barry, Adam, Associate Professor
Health & Kinesiology
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Barteau, Mark A, Professor
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Bashir, Hassan, Associate Professor
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Baskin, Dean R, Assistant Professor
Mathematics
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Petroleum Engineering
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Batchelor, Bill, Senior Professor
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Batista, Paul J, Associate Professor
Health & Kinesiology
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Batteas, James D, Professor
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Batteas, James D, Professor
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Battle III, Guy A, Professor
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Baudier, Florent P, Instructional Assistant Professor
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Baumann, Todd M, Adjunct Assistant Professor
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Bayless, Kayla J, Associate Professor
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Baylor, Amber A, Associate Professor
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Bazan, Daniela Z, Clinical Assistant Professor
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Bazer, Fuller W, University Distinguished Professor
Animal Science
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Bazzi, Hassan, Professor
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Bazzi, Hassan S, Professor
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Beatty, Robert C, Adjunct Assistant Professor
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Becker, Aaron C, Clinical Associate Professor
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Becker, Katrin, Professor
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Becker, Mauro R, Research Professor
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Behmer, Spencer T, Professor
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Behzadan, Amir H, Associate Professor
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Belic, Milivoj R, Professor
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Bellows, Charles T, Adjunct Professor
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Beltran, Liliana O, Associate Professor
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Belyanin, Alexey A, Professor
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Benedik, Michael J, Professor
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Bennett Jr, George K, Senior Professor
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Bento, Pedro M, Assistant Professor
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Benzerga, Amine A, Professor
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PHD, Ecole Nationale Supérieure Des Mines De Paris, 2000

Benzerga, Amine A, Professor
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Beremand, Phillip D, Lab Instructor
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Bergbreiter, David E, Professor
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Bergeron, Christine S, Clinical Professor
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Berghman, Luc R, Professor
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Bergman, Mindy E, Professor
Psychological & Brain Sciences
PHD, University of Illinois at Urbana-Champaign, 2001

Bergthorsson, Ulfar, Associate Professor
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Berke, Philip R, Professor
Land Arch & Urban Planning
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Berkolaiko, Gregory, Professor
Mathematics
PHD, University of Bristol, 1997

Bermudez Ospina, Jose L, Professor
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PhD, Cambridge University, 1992

Bernal, Julio S, Professor
Entomology
PHD, University of California, Riverside, 1995

Bernard, Jessica A, Assistant Professor
Psychological & Brain Sciences
PHD, University of Michigan, 2012

Bernardo, Joseph, Research Associate Professor
Biology
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Berry, Charles W, Professor
Biomedical Sciences
PHD, Baylor University College of Dentistry, 1973

Berry, Leonard L, University Distinguished Professor
Marketing
PHD, Arizona State University, 1968

Bethel, Ryan D, Lecturer
Chemistry
PHD, Texas A&M University, 2014

Bettati, Riccardo, Professor
Computer Science & Engineering
PHD, University of Illinois, 1994

Betz, Timm L, Assistant Professor
Political Science
PHD, University of Michigan, 2015

Bevevino, Kari E, Veterinary Resident Instructor
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Beyerlein, Michael M, Professor
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PHD, Colorado State University, 1986

Bhatia, Mukul R, Executive Professor
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PHD, The Australian National University, 1982

Bhattacharya, Anirban, Associate Professor
Statistics
PHD, Duke University, 2012

Bhattacharya, Nandini, Professor
English
PHD, University of Rochester, 1992

Bhattacharya, Raktim, Associate Professor
Aerospace Engineering
PHD, University of Minnesota, 2003

Bhattacharyya, S P, Professor
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Bickham, Troy O, Professor
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PHD, University of Oxford, 2001

Bieber, Susanne C, Assistant Professor
Visualization
PHD, Freie Universitat Berlin, 2012

Bierman, Leonard, Professor
Management
JD, University of Pennsylvania Law School, 1978

Bilof, Katherine, Clinical Assistant Professor
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Birely, Anna C, Associate Professor
Civil & Environmental Engineering
PHD, University of Washington, 2012

Birgisson, Bjorn, Professor
Civil & Environmental Engineering
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Bishop, Corey J, Assistant Professor
Biomedical Engineering
PHD, The Johns Hopkins University School of Medicine, 2015

Bishop, Michael P, Professor
Geography
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Bissett Jr, Wesley T, Associate Professor
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Bistline, Erin N, Lecturer
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PHD, Florida State University, 2011

Biswas, Saurabh, Associate Professor of the Practice
Biomedical Engineering
PHD, Texas A&M University, 2011

Bitouni, Anneta, Clinical Assistant Professor
Public Health Sciences
DDS, Kapodistrian University of Athens, 2004

Bixler, Richard P, Lecturer
Wildlife & Fisheries Sciences
PHD, Colorado State University, 2014

Blackmon, Heath L, Assistant Professor
Biology
PHD, University of Texas at Arlington, 2015

Blackwell, Catherine S, Lecturer
English
PHD, Texas Tech University, 2012

Blackwell, James, Lecturer
George Bush School of Govern
PHD, Tufts University, 1984

Blackwell, Ronnie, Adjunct Professor
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DJ, Texas Wesleyan University School of Law, 2014

Blake, Jamilia J, Associate Professor
Educational Psychology
PHD, University of Georgia, 2007

Blalock, Katherine E, Clinical Assistant Professor
College of Medicine
MD, Texas A&M Health Science Center, 2011

Blanton, Carlos K, Professor
History
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Blanton, Hart C, Professor
Communication
PHD, Princeton University, 1994

Blasingame, Thomas A, Professor
Petroleum Engineering
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Bloink, Robert, Adjunct Professor
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LLM, University of Florida College of Law, 1997
JD, Wayne State University Law School, 1995

Blomstedt, Larry W, Lecturer
Liberal Studies
PHD, Texas A&M University, 2008

Bloomfield, Susan A, Professor
Health & Kinesiology
PHD, Ohio State University, 1992

Blue-Mclendon, Alice, Clinical Associate Professor
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Bluemel, Janet F, Professor
Chemistry
PHD, Technical University of Munich, Germany, 1989

Boadu, Frederick O, Professor
Agricultural Economics
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Boas, Harold P, Professor
Mathematics
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Bodden, Jack L, Lecturer
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PHD, Ohio State University, 1969

Bodson, Bruce R, Lecturer
Marine Science
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Boehm, Rodney J, Associate Professor of the Practice
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MS, Texas A&M University, 1979

Bogomolnaya, Lydia M, Research Assistant Professor
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PHD, Kazan State University, 2001

Boivie, Steven R, Associate Professor
Management
PHD, University of Texas at Austin, 2006

Bolanos, Carlos A, Associate Professor
Psychological & Brain Sciences
PHD, Northeastern University, 2000

Bolger Jr, Patrick A, Instructional Assistant Professor
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PHD, University of Arizona, 2005

Bolin, Jane, Professor
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PHD, Pennsylvania State University, 2002
JD, University of Oregon School of Law, 1982

Bolin, Jane L, Professor
Health Policy & Management
PHD, Pennsylvania State University, 2002
JD, University of Oregon School of Law, 1982

Bolouri, Ali, Professor
Comprehensive Dentistry
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Bombardi, Rodrigo J, Assistant Professor
Geography
PHD, University of California Santa Barbara, 2013
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Bomer Galvao, Cassia, Assistant Professor
Maritime Business Administration
PHD, Pontificia Universidade Catolica, 2017

Bond, Jon R, Professor
Political Science
PHD, University of Illinois at Urbana - Champaign, 1978

Bondos, Sarah E, Associate Professor
College of Medicine
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Bonito, Andrea, Professor
Mathematics
PHD, Ecole Polytechnique Federale de Lausanne, France, 2006

Bonkale, Willy L, Adjunct Assistant Professor
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PHD, Karolinska Institute, 1999

Bonner, Rickie, Clinical Assistant Professor
College of Nursing
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Boone II, Edward F, Lecturer
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MS, Pennsylvania State University, 2000

Booth, Geoffrey J, Associate Professor
Land Arch & Urban Planning
MA, University of Queensland, 1987

Borazjani, Iman, Associate Professor
Mechanical Engineering
PHD, University of Minnesota, 2008

Borchardt, Craig W, Instructional Assistant Professor
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PHD, Texas A&M University, 1996

Bordin, Angela I, Assistant Professor
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DVM, Federal University of Santa Maria, Brazil, 2002

Borges Gonzalez, Alejandro, Assistant Professor
Architecture
MAR, Cornell University, 1994

Borosh, Itshak, Senior Professor
Mathematics
PHD, Weizmann Institute of Science, 1966

Borovoy Hofman, Nilly, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Universidad Tecnologica de Mexico, 2006

Bosshard, John C, Lecturer
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2012

Boswell, Wendy R, Professor
Management
PHD, Cornell University, 2000

Botezatu, Ioana, Assistant Professor and Extension Enologist
Horticultural Sciences
PHD, Brock University (St. Catherines, ON, CANADA, 2014

Boucher, Anthony M, Clinical Associate Professor
Health & Kinesiology
PHD, Texas Women's University, 2008

Boudreau, Christen E, Assistant Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2010
PHD, Baylor College of Medicine, 2001

Bouhali, Othmane, Research Professor
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PHD, Universite Libre de Bruxelles, Faculte des Sciences, 1999

Boulahouache Chaouki, Instructional Assistant Professor
Foundational Sciences
PHD, Syracuse University, 2002

Bouton, Cynthia A, Professor
History
PHD, SUNY Binghamton, 1985

Boutros, Joseph J, Professor
Texas A&M University at Qatar
PHD, Telecom Paris Tech (ENST), 1996

Boutton, Thomas W, Professor
Ecosystem Science & Mgmt
PHD, Brigham Young University, 1979

Bouwman, Christa, Associate Professor
Finance
PHD, University of Michigan, 2005

Bowen, Daniel H, Assistant Professor
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PHD, University of Arkansas, 2013

Bowersox, Rodney D, Professor
Aerospace Engineering
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Bowman, Ann O, Professor
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PHD, University of Florida, 1979

Bowman, Kenneth P, Professor
Atmospheric Sciences
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Boyd, Barry L, Associate Professor
Ag Leadership, Educ & Comm
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Boyd, James G, Associate Professor
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Bracci, Joseph M, Professor
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PHD, University at Buffalo - SUNY, 1992

Bracher, Nathan J, Professor
International Studies
PHD, University of Texas at Austin, 1984

Brackin, Michael S, Instructional Assistant Professor
Civil & Environmental Engineering
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Bradbury, James D, Adjunct Professor
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Brady, Emily, Professor
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PHD, University of Glasgow, 1992

Braga Neto, Ulisses, Associate Professor
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Bragg, Belinda L, Lecturer
Political Science
PHD, Texas A&M University, 2006

Braman, Sandra, Professor
Communication
PHD, University of Minnesota - Twin Cities, 1988

Brandt, Paul C, Associate Professor
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PHD, University of Kentucky, 1990

Brannan, Michael P, Assistant Professor
Mathematics
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Brannstrom, Christian, Professor
Geography
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Bray, Amanda E, Clinical Assistant Professor
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Brehm, Amanda J, Veterinary Resident
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Brenner, David A, Lecturer
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Briers, Gary E, Professor
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Bright Jr, Leonard A, Associate Professor
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PHD, Portland State University, 2003

Brightsmith, Donald J, Associate Professor
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Brinsko, Steven P, Professor
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PHD, Cornell University, 1995
DVM, University of Florida, 1985

Briske, David D, Professor
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PHD, Colorado State University, 1978

Brison, Natasha T, Assistant Professor
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JD, University of Georgia School of Law, 1998

Brock II, Ralph A, Adjunct Assistant Professor
Orthodontics
DDS, Meharry Medical College, 2000

Brody, Samuel D, Professor
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Brooker, Rebecca J, Assistant Professor
Psychological & Brain Sciences
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Brooks, Charles E, Associate Professor
History
PHD, University of Buffalo, 1988

Brooks, Sarah D, Professor
Atmospheric Sciences
PHD, University of Colorado, 2002

Brossart, Dan F, Associate Professor
Educational Psychology
PHD, University of Missouri - Columbia, 1996

Brothers, Edward N, Associate Professor
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PHD, Pennsylvania State University, 1997

Broussard, Albert S, Professor
History
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Brown Philip, Associate Professor
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Brown, Adam T, Clinical Assistant Professor
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PHARM D, Texas A&M University, 2013

Brown, Alexander L, Associate Professor
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Brown, Jerry M, Adjunct Assistant Professor
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Brown, Lawrence S, Instructional Associate Professor
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Brown, Lemar M, Executive Professor
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MBA, University of Pennsylvania (The Wharton School), 2000

Brown, Robert D, Professor
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MLA, University of Guelph, 1982

Brown, Steven Dunning, Assistant Professor
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Brown, William A, Professor
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Brumbelow, James K, Associate Professor
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Brundage, Adrienne L, Instructional Assistant Professor
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Bryant Jr, Vaughn M, Professor
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Bryant, John A, Associate Professor
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Bryk, Mary E, Associate Professor
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Buchanan, John J, Professor
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Buckley Jr, John J, Professor of the Practice
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Buenger, Victoria L, Clinical Professor
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Bukkapatnam, Satish T, Professor
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Bukkapatnam, Satish T, Professor
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Bullock, Justin B, Assistant Professor
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Burch, Dan, Clinical Assistant Professor
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Burch, Robert W, Professor
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Burdette, Kerin L, Clinical Assistant Professor
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Burdine, James N, Professor
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Burgess, Kevin, Professor
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PHD, The University of Cambridge, 1983

Burghardt, Beatrix, Visiting Assistant Professor
Teaching, Learning & Culture
PHD, Indiana University, 2015

Burghardt, Robert C, Professor
Vet Integrative Biosciences
PHD, Wayne State University, 1976

Burk, James S, Professor Emeritus
Sociology
PHD, University of Chicago, 1982

Burkart, Patrick C, Professor
Communication
PHD, University of Texas, 2000

Burke, Mack D, Associate Professor
Educational Psychology
PHD, University of Oregon, 2001

Burke, Shanna H, Professor
Educational Psychology
PHD, University of Oregon, 1998

Burke, Shannon, Assistant Professor
TAMU Libraries
PHD, Texas Women's University, 2004

Burlbaw, Lynn M, Professor
Teaching, Learning & Culture
PHD, University of Texas, 1989

Burnett, Janna E, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 2009

Burns, Rebecca J, Clinical Assistant Professor
College of Nursing
DNP, Loyola University New Orleans, 2015

Burress, Cynthia B, Instructional Assistant Professor
School of Law
JD, Seattle University School of Law, 2003

Burris, Mark W, Professor
Civil & Environmental Engineering
DOC, University of South Florida, 2001

Burt, John Z, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2009

Busch, Paul S, Professor
Marketing
PHD, The Pennsylvania State University, 1974

Buschang, Peter H, Professor
Orthodontics
PHD, University of Texas Austin, 1980

Bustamante, Juan J, Instructional Assistant Professor
College of Pharmacy
PHD, University of Texas, San Antonio, 2003

Bustos, Isaac D, Instructional Assistant Professor
Performance Studies
PHD, University of Texas, 2010

Butenko, Sergiy I, Professor
Industrial & Systems Eng
PHD, University of Florida, 2003

Butler-Purry, Karen L, Professor
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PHD, Howard University, 1994

Butterfield, Vernee, Lecturer
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PHD, Texas A&M University, 2018

Byington, Carrie, Professor
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MD, Baylor College of Medicine, 1989

Byrne, David H, Professor
Horticultural Sciences
PHD, Cornell University, 1980

Byrnes, William H, Executive Professor
School of Law
LLM, Universiteit van Amsterdam, 1995
JD, Loyola University School of Law, 1992

Byrns, Glenda E, Clinical Professor
Educational Psychology
PHD, Texas A&M University, 2007

Cabrera Joshua, Clinical Assistant Professor
College of Medicine
MD, Oregon Health Sciences University, 1998

Caffey, Stephen M, Instructional Assistant Professor
Architecture
PHD, The University of Texas at Austin, 2008

Cagin, Tahir, Professor
Materials Science & Engr
PHD, Clemson University, 1988

Cahill, Anthony T, Associate Professor
Civil & Environmental Engineering
PHD, Johns Hopkins University, 1998

Cai, Jing, Associate Professor
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PHD, University of Hong Kong, 2006

Cai, Yue, Visiting Assistant Professor
Mathematics
PHD, University of Kentucky, 2016

Cai, Zhuo, Adjunct Assistant Professor
Orthodontics
PHD, Ohio State University, 1996
DDS, Beijing Medical University, 1987

Cairns, David M, Professor
Geography
PHD, University of Iowa, 1995

Calboli, Irene, Professor
School of Law
LLM, London School of Economics and Political Science, 1999
PHD, University of Pavia School of Law, 1997

Calderbank, Arthur R, Visiting Professor
College of Engineering
PHD, California Institute of Technology, 1980

Caldwell, David J, Professor
Poultry Science
PHD, Texas A&M University, 1997

Call, Matthew L, Assistant Professor
Management
PHD, University of South Carolina, 2016

Callaghan, Timothy H, Assistant Professor
Health Policy & Management
PHD, University of Minnesota, Twin Cities, 2016

Camacho, Antolino C, Clinical Assistant Professor
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DMD, University of Puerto Rico Medical Sciences School of Dentistry,
1975

Campagnol Abuabara, Gabriela, Lecturer
Architecture
PHD, University of Sao Paulo - USP, 2008

Campana, Lilia, Instructional Assistant Professor
Visualization
PHD, Texas A&M University, 2014

Campbell, August J, Instructional Associate Professor
Health & Kinesiology
PHD, Texas State University, 2005

Campbell, Heidi A, Professor
Communication
PHD, The University of Edinburgh, 2002

Campbell, Lisa, Professor
Oceanography
PHD, State University of New York at Stony Brook, 1985

Campbell, Mary E, Associate Professor
Sociology
PHD, University of Wisconsin - Madison, 2004

Canizales, Stephanie L., Assistant Professor
Sociology
PHD, University of Southern California, 2018

Cannaday, Rania A, Clinical Assistant Professor
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MD, The University of Texas Health Science Center at Houston, 2014

Cannella Jr, Albert A, Professor
Management
PHD, Columbia University, 1991

Cannon, Carolyn L, Associate Professor
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PHD, The University of Texas Health Science Center at Houston, 1993

Cantey V, Samuel B, Adjunct Professor
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JD, University of Tulsa College of Law, 2002

Cantrell Jr, Pierce E, Senior Associate Professor
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PHD, Georgia Institute of Technology, 1981

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Teaching, Learning & Culture
PHD, Texas A&M University, 2008

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PHD, Mississippi State University, 2007

Capareda, Sergio C, Professor
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PHD, Texas A&M University, 1990

Capraro, Mary M, Professor
Teaching, Learning & Culture
PHD, University of Southern Mississippi, 2000

Capraro, Robert M, Professor
Teaching, Learning & Culture
PHD, University of Southern Mississippi, 2000

Cardoso De Cardoso, Leonardo, Assistant Professor
Performance Studies
PHD, University of Texas at Austin, 2013
MMU, University of Texas at Austin, 2010

Carey, John B, Professor
Poultry Science
PHD, Kansas State University, 1982

Carley, Robert F, Assistant Professor
International Studies
PHD, Texas A&M University, 2012

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Carlson, David L, Professor
Anthropology
PHD, Northwestern University, 1979

Carlson, Deborah N, Associate Professor
Anthropology
PHD, University of Texas at Austin, 2004

Carlson, Kimberly A, Senior Lecturer
Construction Science
MAR, Texas A&M University, 2002

Carly-Miles, Claire I, Lecturer
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PHD, Texas A&M University, 2008

Carrillo, Genny, Associate Professor
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PHD, Tulane University, School of Public Health, 1993

Carrillo, Roberto, Adjunct Assistant Professor
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DDS, Universidad Autonoma de Nuevo Leon, 2002

Carrino, Gerard E, Instructional Professor
Health Policy & Management
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Carroll, Matthew C, Instructional Assistant Professor
Marine Engineering Technology
PHD, University of Illinois at Urbana-Champaign, 1986

Carroll, Raymond J, Distinguished Professor
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Carson, Katherine H, Instructional Assistant Professor
Soil & Crop Sciences
PHD, University of Arkansas, 1999

Carstens, Gordon E, Professor
Animal Science
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Carter Sowell, Adrienne R, Associate Professor
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PHD, Purdue University, 2010

Carter, Misti H, Clinical Assistant Professor
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Carter, Tamara A, Instructional Assistant Professor
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Cartwright, Chris S, Clinical Assistant Professor
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Case, Raymundo P, Professor of the Practice
Materials Science & Engr
PHD, University of Manchester Institute of Science and Technology, 2002

Casellas Connors, John Patrick, Assistant Professor
Geography
PHD, Arizona State University, 2015

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Comprehensive Dentistry
MSD, Universidad Interncontinental, 2013
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Casola, Claudio, Assistant Professor
Ecosystem Science & Mgmt
PHD, University of Pisa, Italy, 2006

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Castillo, Alejandro, Associate Professor
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Castillo, Jasen J, Associate Professor
International Affairs
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Castillo, Linda G, Professor
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Castillo, Marco, Professor
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PHD, University of Wisconsin - Madison, 2001

Castor, Nicole M, Assistant Professor
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Castro Olivo, Sara M, Associate Professor
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Castro, Juan F, Clinical Assistant Professor
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Caverlee, James B, Associate Professor
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PHD, Carnegie Mellon University, 2006

Chaki, Sankar P, Research Assistant Professor
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Chapkin, Robert S, Distinguished Professor
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Chapman, Piers, Research Professor
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Chappell, Thomas M, Assistant Professor
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PHD, Duke University, 2010

Charoenphol, Phapanin, Research Assistant Professor
Mechanical Engineering
DEN, University of Michigan, 2012

Chaspari, Theodora, Assistant Professor
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Chau, Van B, Clinical Assistant Professor
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Cheff, Stephen O, Clinical Assistant Professor
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Cheibub, Jose A, Professor
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PHD, University of Chicago, 1994

Chellam, Shankaraman, Professor
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Chen, Goong, Professor
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Chen, Hamn C, Professor
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Chen, Hamn C, Professor
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PHD, University of Iowa, 1982

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Comprehensive Dentistry
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Chen, Jianer, Professor
Computer Science & Engineering
PHD, Columbia University, 1990

Chen, Lei-Shih, Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2007

Chen, Weijung, Professor
College of Medicine
PHD, Peking University, 2003

Chen, Willa W, Professor
Statistics
PHD, New York University, 2000

Chen, Yong, Associate Professor
Finance
PHD, Boston College, 2007

Chen, Zhilei, Associate Professor
College of Medicine
PHD, University of Illinois, 2006

Cheng, Linda L, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1999

Cheng, Yi-Shing L, Professor
Diagnostic Sciences
PHD, Baylor University, 1999
DDS, KAOHSIUNG MEDICAL COLLEGE, 1990

Cheng, Zheng Dong, Professor
Chemical Engineering
PHD, Princeton University, 1999

Cheng, Zheng Dong, Professor
Materials Science & Engr
PHD, Princeton University, 1999

Chester, Frederick M, Professor
Geology & Geophysics
PHD, Texas A&M University, 1988

Chester, Judith S, Professor
Geology & Geophysics
PHD, Texas A&M University, 1992

Chew, Boon P, Professor
Nutrition & Food Science
PHD, Purdue University, 1978

Chico, Diane E, Associate Professor
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PHD, The University of Texas Medical Branch at Galveston, 2002

Chin, Siu A, Professor
Physics & Astronomy
PHD, Massachusetts Institute of Technology, 1975

Chirayath, Sunil S, Associate Professor
Nuclear Engineering
PHD, University of Madras, 2005
PHD, University of Madras, India, 2005

Chiu, Weihsueh A, Professor
Vet Integrative Biosciences
PHD, Princeton University, 1998

Cho, Jae H, Assistant Professor
Biochemistry & Biophysics
PHD, State University of New York at Stony Brook, 2006

Cho, Jun Y, Clinical Associate Professor
Periodontics
DDS, Seoul National University, Korea, 1961

Cho, Seok Hwan, Associate Professor
Comprehensive Dentistry
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Choe, Yoonsuck, Professor
Computer Science & Engineering
PHD, University of Texas, 2001

Choi, Keslea Y, Research Assistant Professor
College of Medicine
PHD, University of California, Davis, 1997

Choi, Kunhee, Associate Professor
Construction Science
PHD, University of California at Berkeley, 2008

Choi, Seong G, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois, 1994

Choudhury, Mahua, Associate Professor
College of Pharmacy
PHARM D, University of Missouri Columbia, 2008

Christian, Gregory A, Assistant Professor
Physics & Astronomy
PHD, Michigan State University, 2011

Chroust, David Z, Associate Professor
TAMU Libraries
PHD, Texas A&M University, 2009

Chu Yew Yee, Sharon Lynn, Assistant Professor
Visualization
PHD, Texas A&M University, 2015

Chu, Kung-Hui, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Berkeley, 1998

Chubaryan, Tatyana, Clinical Associate Professor
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PHD, Moscow State University, 1994

Chung, Jin-Sug, Associate Professor Of The Practice
Ocean Engineering
PHD, University of Michigan, 1991

Ciccolella, Federica, Professor
International Studies
PHD, Columbia University, 2004

Cirillo, Jeffrey D, Professor
College of Medicine
PHD, Albert Einstein College of Medicine, 1992

Cisneros-Zevallos, Luis A, Professor
Horticultural Sciences
PHD, University of California, Davis, 1998

Cizmas, Leslie H, Instructional Assistant Professor
Environmental & Occpntl Hlth
PHD, Texas A&M University, 2003

Cizmas, Paul G, Professor
Aerospace Engineering
PHD, Duke University, 1995

Claridge, David E, Professor
Mechanical Engineering
PHD, Stanford University, 1976

Clark Jr, Norman L, Instructional Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2015

Clark, Heather, Research Assistant Professor
Hlth Promotion & Comm Hlth Sci
DrPH, Texas A&M University, 2014

Clark, Robert M, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2010

Clark, William, Professor and Head
Political Science
PHD, Rutgers University, 1994

Clark, William B, Professor
English
PHD, Louisiana State University and A&M College, 1973

Clayton, Mark J, Professor
Architecture
PHD, Stanford University, 1998
MAR, University of California at Los Angeles, 1987

Clement, Brad M, Professor
Geology & Geophysics
PHD, Columbia University, 1985

Clement, Tracy M, Assistant Professor
Vet Physiology & Pharmacology
PHD, Washington State University, 2009

Clemetson, Jonathan C, Adjunct Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 2002

Clendenin, Angela G, Instructional Assistant Professor
Epidemiology & Biostatistics
PHD, Texas A&M University, 2017

Cline, Daren B, Professor
Statistics
PHD, Colorado State University, 1983

Cline, Kayla M, Clinical Assistant Professor
Accounting
PHD, Texas A&M University, 2017

Clough, Michael P, Professor
Teaching, Learning & Culture
PHD, The University of Iowa, 1994

Clubb Jr, Fred J, Professor
Biomedical Engineering
PHD, University of Alabama - Birmingham, 1983
DVM, Auburn University, 1971

Clubb Jr, Fred J, Clinical Professor
Veterinary Pathobiology
PHD, University of Alabama - Birmingham, 1983
DVM, Auburn University, 1971

Coates, Craig J, Instructional Associate Professor
Entomology
PHD, Australian National University, 1997

Cobb, Stanton W, Clinical Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1983

Cobbs, Elizabeth A, Professor
History
PHD, Stanford University, 1988

Cochrum, Alan M, Lecturer
Chemical Engineering
PHD, University of Texas at Arlington, 2015

Cohen, Daniel, Professor
Accounting
PHD, Northwestern University, 2004

Cohen, Glenn T, Adjunct Assistant Professor
Orthodontics
DMD, University of Florida, 2007

Cohen, Noah D, Professor
Vet Large Animal Clinical Sc
PHD, Johns Hopkins University, 1988
DVM, University of Pennsylvania, 1983

Cohn, Samuel R, Professor
Sociology
PHD, University of Michigan Ann Arbor, 1981

Cohn, William B, Senior Lecturer
Biology
PHD, Texas A&M University, 2000

Cole, Collier M, Lecturer
Liberal Studies
PHD, University of Houston, 1976

Cole, Stacy C, Lecturer
Public Service & Administration
PHD, Texas A&M University, 2016

Coleman, Cheryl L, Lecturer
Liberal Studies
JD, Northwestern University School of Law, 1993

Coleman, Michelle C, Assistant Professor
Vet Large Animal Clinical Sc
DVM, University of Georgia, 2007

Collins, Daniel P, Lecturer
Chemistry
PHD, University of South Carolina, 2012

Collins, Michael S, Professor
English
PHD, Columbia University, 1999

Collins, Monte K, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1984

Collopy, William F, Lecturer
History
PHD, Texas A&M University, 2011
MLA, University of St. Thomas, 2006

Colwell, Gregory B, Professor
Hlth Promotion & Comm Hlth Sci
PHD, Indiana University - Bloomington, 1992

Comech, Andrew, Associate Professor
Mathematics
PHD, Columbia University, 1997

Conkey, Andrew, Instructional Associate Professor
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PHD, Texas A&M University, 2007

Conlee, Don T, Instructional Professor
Atmospheric Sciences
PHD, Texas A&M University, 1994

Conrad, Charles R, Professor
Communication
PHD, Kansas University, 1972

Contreras, Celestina L, Clinical Professor
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JD, The University of Texas at Austin, 1989

Conway, Daniel W, Professor
Philosophy & Humanities
PHD, University of California, San Diego, 1985

Conway, Kevin W, Associate Professor
Wildlife & Fisheries Sciences
PHD, Sain Louis University, 2010

Cook, Audrey K, Associate Professor
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DVM, University of Edinburgh, 1989

Cook, David W, Adjunct Professor
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JD, Texas Wesleyan University School of Law, 2005

Cook, Scott J, Assistant Professor
Political Science
PHD, University of Pittsburgh, 2014

Cook, Walter E, Clinical Associate Professor
Veterinary Pathobiology
PHD, University of Wyoming, 1999
DVM, University of California - Davis, 1994

Cooke, Leighton B, Professor
International Studies
PHD, University of California, Berkeley, 1983

Cooke, Olga M, Associate Professor
International Studies
PHD, University of London, 1982

Cooke, Reinaldo F, Associate Professor
Animal Science
PHD, University of Florida, 2008

Coombs, William T, Professor
Communication
PHD, Purdue University, 1990

Cooper Jr, John T, Associate Professor of the Practice
Land Arch & Urban Planning
PHD, University of North Carolina - Chapel Hill, 2004

Cooper, Rich P, Lecturer
English
PHD, Louisiana State University, 2011

Coopersmith, Jonathan, Professor
History
PHD, University of Oxford, 1985

Cope, Dale A, Associate Professor of the Practice
Mechanical Engineering
PHD, Wichita State University, 2002

Cope, Jason B, Adjunct Assistant Professor
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PHD, Texas A&M University Baylor College of Dentistry, 1999

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Mechanical Engineering
PHD, Texas A&M, 1990

Cornell, Karen K, Professor
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PHD, Purdue University, 1998
DVM, Purdue University, 1988

Cortes, Kalena E, Associate Professor
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PHD, University of California at Berkeley, 2002

Coseo, Lara T, Adjunct Assistant Professor
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Cosgriff-Hernandez, Elizabeth M, Associate Professor
Biomedical Engineering
PHD, Case Western Reserve University, 2005

Cote, Gerard L, Professor
Biomedical Engineering
PHD, University of Connecticut, 1990

Cote, Murray J, Associate Professor
Health Policy & Management
PHD, Texas A&M University, 1996

Cotter, Jill Marie, Clinical Assistant Professor
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Coufal, Craig, Associate Professor & Extension Specialist
Poultry Science
PHD, Texas A&M University, 2005

Coulson, Robert N, Professor
Entomology
PHD, University of Georgia, 1969

Courtright, Stephen H, Associate Professor
Management
PHD, University of Iowa, 2012

Craig, Cheryl J, Professor
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PHD, University of Alberta, Canada, 1992

Craig, Mark A, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
MD, Texas A&M University Baylor College of Dentistry, 1993
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Cramer, George H, Clinical Associate Professor
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DDS, Baylor College of Dentistry, 1975

Crane, Stephen L, Clinical Associate Professor
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DDS, Baylor College of Dentistry, 1973

Creasy, Rebecca A, Lecturer
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PHD, University of Florida, 2013

Creasy, Terry S, Associate Professor
Materials Science & Engr
PHD, University of Delaware, 1997

Creevy, Kate E, Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Tennessee, 1998

Crick, Nathan A, Professor
Communication
PHD, University of Pittsburgh, 2005

Criscione, Charles D, Associate Professor
Biology
PHD, Oregon State University, 2005

Criscione, John C, Professor
Biomedical Engineering
PHD, The John Hopkins University School of Medicine, 2005

Criscitiello, Michael F, Associate Professor
Veterinary Pathobiology
PHD, University of Miami, 2003

Crisman, Kevin J, Professor
Anthropology
PHD, University of Pennsylvania, 1989

Crisman-Cox, Casey, Assistant Professor
Political Science
PHD, University of Rochester, 2016

Crocker, Ryan C, Executive Professor
Bush School of Govt. - Deans
BA, Whitman College, 1971

Crompton, John L, Distinguished Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 1977

Crosby, Kevin M, Professor
Horticultural Sciences
PHD, Texas A&M University, 1999

Cross, H Russell, Professor
Animal Science
PHD, Texas A&M University, 1972

Crouch, Elizabeth A, Lecturer
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PHD, Texas A&M University, 1996

Crouse, Stephen F, Professor
Health & Kinesiology
PHD, The University of New Mexico, 1984

Crump, Thomas B, Adjunct Assistant Professor
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Cruz-Reyes, Jorge A, Professor
Biochemistry & Biophysics
PHD, London School of Hygiene & Tropical Medicine, 1992

Cruzado Garcia, Aitor, Lecturer
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PHD, Mondragon University, 2013

Culp III, Charles H, Professor
Architecture
PHD, Iowa State University, 1976

Cunningham, George B, Professor
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Curley Jr, Kevin O, Instructional Assistant Professor
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Curley, Stephen J, Professor
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Daniel, Stephen H, Professor
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Davis, Katherine M, Assistant Professor
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PHD, University of Illinois at Urbana-Champaign, 2011

Davis, Randall W, Professor
Marine Biology
PHD, University of California at San Diego, 1980

Davis, Tim D, Professor & Senior Scientist
Horticultural Sciences
PHD, Oregon State University, 1983

Davis, Timothy A, Professor
Computer Science & Engineering
PHD, University of Illinois - Urbana Champaign, 1989

Davis, Trina J, Associate Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2005

Davison, Chayla H, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Denver, 2013

Davison, Richard R, Professor
Visualization
MFA, Washington university St. Louis, 1979

Davlasheridze, Meri, Assistant Professor
Marine Science
PHD, Pennsylvania State University, 2013

Dawson Mathur, Vani A, Assistant Professor
Psychological & Brain Sciences
PHD, Northwestern University, 2012

Dawson, Lindsay A, Research Assistant Professor
Vet Physiology & Pharmacology
PHD, Tulane, 2014
PHD, Tulane University, 2014

De Carvalho Cardoso, Rodolfo, Assistant Professor
Animal Science
PHD, Texas A&M University, 2014
DVM, Sao Paulo State University, 2005

De Lima Amaral, Ernesto F, Assistant Professor
Sociology
PHD, University of Texas at Austin, 2007

De Miranda, Michael A, Professor and Head
Teaching, Learning & Culture
PHD, University of California, 1996

De Ruiter, Darryl J, Professor
Anthropology
PHD, University of the Witwatersrand, South Africa, 2001

Dechow, Paul C, Regents Professor
Biomedical Sciences
PHD, University of Chicago, 1980

Deck, Jennifer P, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2009

Dees, William L, Professor Emeritus
Vet Integrative Biosciences
PHD, Texas A&M University, 1982

Defigueiredo, Paul J, Associate Professor
College of Medicine
PHD, Cornell University, 1997

Del Ciampo, Matthew J, Lecturer
Performance Studies
PHD, Florida State University, 2016
MMU, Florida State University, 2012

Delgado, Adolfo, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 2008

Dellapenna, Timothy M, Associate Professor
Marine Science
PHD, The College of William & Mary, 1999

Delmore, Kira, Assistant Professor
Biology
PHD, University of British Columbia, 2015

Demkowicz, Michal J, Associate Professor (courtesy appointment)
Mechanical Engineering
PHD, Massachusetts Institute of Technology, 2005

Demkowicz, Michal J, Associate Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2005

Demlow, Alan R, Professor
Mathematics
PHD, Cornell University, 2002

Demorrow, Sharon, Professor
College of Medicine
PHD, The University of Queensland, 1999

Demorrow, Sharon, Associate Professor
College of Medicine
PHD, The University of Queensland, 1999

Deng, Youjun, Associate Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2001

Dennie, Christian S, Adjunct Professor
School of Law
JD, University of Oklahoma, 2004

Depoy, Darren L, Professor
Physics & Astronomy
PHD, University of Hawaii at Manoa, 1987

Derr, James N, Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1990

Derry, Paul, Associate Professor
Institute of Biosciences & Tec
PHD, Rice University, 2016

Derry, Paul J, Assistant Professor
College of Medicine
PHD, Rice University, 2016

Dessler, Andrew E, Professor
Atmospheric Sciences
PHD, Harvard University, 1994

Deutz, Nicolaas, Professor
Health & Kinesiology
MD, University of Amsterdam, 1988

Deva, Eswara-Reddy B, Associate Professor
TAMU Libraries
PHD, Karnataka University, 1984

Devarenne, Timothy P, Associate Professor
Biochemistry & Biophysics
PHD, University of Kentucky, 2000

Deveau, Michael A, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Kansas State University, 2005

Devers, Cynthia E, Associate Professor
Management
PHD, Michigan State University, 2003

Devore, Ronald A, University Distinguished Professor
Mathematics
PHD, Ohio State University, 1967

Dewitt, Thomas J, Associate Professor
Wildlife & Fisheries Sciences
PHD, State University of New York - Binghamton, 1996

Dewitte, Paula S, Associate Professor of the Practice
Computer Science & Engineering
PHD, Texas A&M University, 1989

Dewji, Shaheen Azim, Assistant Professor
Nuclear Engineering
PHD, Georgia Institute of Technology, 2014

Dexter, Rayna M, Instructional Assistant Professor
Performance Studies
MFA, Kent State University, 2009

Dharani, Sathish, Postdoctoral Research Associate
College of Pharmacy
PHD, Kakatiya University, India, 2014

Diaz Artiles, Ana, Assistant Professor
Aerospace Engineering
PHD, Massachusetts Institute of Technology, 2015

Diaz Rodriguez, Ivan, Instructional Assistant Professor
College of Engineering
PHD, Texas A&M University, 2017

Diaz, Michelle C, Clinical Associate Professor
Accounting
PHD, Texas A&M University, 2005

Dicaglio, Joshua M, Assistant Professor
English
PHD, Pennsylvania State University, 2016

Dicaglio, Sara, Assistant Professor
English
PHD, Pennsylvania State University, 2016
MFA, University of Michigan, 2008

Dickey, Margot B, Adjunct Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2015

Dickey, Nancy J, Professor
College of Medicine
MD, The University of Texas Health Science Center at Houston, 1976

Dickman, Martin B, Professor
Plant Pathology & Microbiology
PHD, University of Hawaii, 1986

Dickson, Donald R, Professor
English
PHD, University of Illinois, Urbana-Champaign, 1981

Diec, Sandy, Clinical Assistant Professor
College of Pharmacy
PHARM D, Texas Tech University, 2015

Diekwisch, Thomas G, Professor and Head, Director
Periodontics
DMD, Philipps-University of Marburg, West Germany, 1986

Diesel, Alison B, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Kansas State University, 2005

Dietrich, Kathryn A, Instructional Associate Professor
Sociology
PHD, Texas A&M University, 1994

Dikec, Altay, Clinical Assistant Professor
Marketing
PHD, Konkuk University, 2012
PHD, Konkuk University - Miller Graduate School of Business, 2012

Dimarco, Steven F, Professor
Oceanography
PHD, University of Texas at Dallas, 1991

Dindot, Scott V, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2003

Ding, Yu, Professor
Industrial & Systems Eng
PHD, University of Michigan, 2001

Dirani, Khalil M, Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Illinois-Urbana Champaign, 2007

Dixit, Manish K, Assistant Professor
Construction Science
PHD, Texas A&M University, 2013

Dixon, Laurie Q, Associate Professor
Teaching, Learning & Culture
PHD, Harvard University Graduate School of Education, 2004

Dixon, Marlene A, Professor
Health & Kinesiology
PHD, Ohio State University, 2002

Dodd, Johnathon R, Clinical Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1979

Doering, Alyssa K, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, Colorado State University, 2015

Doleac, Jennifer, Associate Professor
Economics
PHD, Stanford University, 2012

Dominguez, Brandon J, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2005

Domsky, Darren K, Associate Professor
Liberal Studies
PHD, York University, 2006

Dongaonkar, Ranjeet M, Assistant Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2008

Dongarra, Jack J, Visiting Professor
Computer Science & Engineering
PHD, University of New Mexico, 1980

Donkor, David A, Associate Professor
Performance Studies
PHD, Northwestern University, 2008

Donnell, Cydney C, Executive Professor
Finance
MBA, Southern Methodist University, 1982

Donovan, Arthur D, Professor of the Practice
Geology & Geophysics
PHD, Colorado School of Mines, 1985

Donzis, Diego A, Associate Professor
Aerospace Engineering
PHD, Georgia Institute of Technology, 2007

Dooley, Kim E, Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1995

Dooley, Larry M, Associate Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1989

Dormire, Sharon L, Professor
College of Nursing
PHD, University of Florida, 1992

Dorsey, Leroy G, Professor
Communication
PHD, Indiana University, 1993

Dostal, Christopher M, Assistant Professor
Anthropology
PHD, Texas A&M University, 2017

Dostal, David, Professor
College of Medicine
PHD, University of Missouri, 1986

Dostal, David E, Professor
College of Medicine
PHD, University of Missouri, 1986

Dougherty Jr, Edward R, Distinguished Professor
Electrical & Computer Eng
PHD, Rutgers State University of New Jersey, 1974

Dowdy, Diane M, Instructional Assistant Professor
Hlth Promotion & Comm Hlth Sci
PHD, Texas A&M University, 1990

Downing, Nancy, Associate Professor
College of Nursing
PHD, The University of Iowa, 2010

Dox, Donnalee, Professor
Performance Studies
PHD, University of Minnesota, Twin Cities, 1995

Dragolich, William E, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Ohio State University, 1983

Drake, Kristin M, Lecturer
Philosophy & Humanities
PHD, Texas A&M University, 2017

Drayer, Penelope R, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M Baylor College of Dentistry, 2009

Drew, Katherine A, Adjunct Professor
School of Law
JD, Southern Methodist University, 1977

Dronen Jr, Norman O, Professor
Wildlife & Fisheries Sciences
PHD, New Mexico State University, 1974

Dror, Olga, Associate Professor
History
PHD, Cornell University, 2003

Dryden, Joseph, Adjunct Professor
School of Law
JD, California Western School of Law, 1990

Duan, Benchun, Professor
Geology & Geophysics
PHD, University of California, Riverside, 2006

Dubois, Dustin W, Research Assistant Professor
College of Medicine
PHD, Texas A&M University Health Science Center, 2004

Dubriwny, Tasha N, Associate Professor
Communication
PHD, University of Georgia, 2005

Duff, Michael James, Visiting Professor
College of Engineering
PHD, University of London, Imperial College, 1972

Duffield, Nicholas G, Professor
Computer Science & Engineering
PHD, Queen Mary College, Univ. of London, 1987

Duffield, Nicholas G, Professor
Electrical & Computer Eng
PHD, Queen Mary College, Univ. of London, 1987

Duffy III, Thomas J, Adjunct Professor
School of Law
JD, Syracuse University, 1973

Dulin, Jennifer N, Assistant Professor
Biology
PHD, University of Texas Health Science Center, 2012

Dunaway, Johanna L, Associate Professor
Communication
PHD, Rice University, 2006

Dunbar, Bonnie Jeanne, Professor
Aerospace Engineering
PHD, University of Houston, 1983

Dunbar, Kim R, University Distinguished Professor
Chemistry
PHD, Purdue University, 1984

Dunlap, Kathrin A, Assistant Professor
Animal Science
PHD, Texas A&M University, 2006

Dunn, Allison L, Assistant Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2018

Dunsford, Deborah W, Senior Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1993

Duong, Tri, Associate Professor
Poultry Science
PHD, North Carolina State University, 2008

Duran Vinent, Orencio, Assistant Professor
Ocean Engineering
PHD, University of Stuttgart, 2007

Duran, Robert, Associate Professor
Sociology
PHD, University of Colorado Boulder, 2006

Durko, Angela M, Instructional Assistant Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2014

Dutta, Bhaskar, Professor
Physics & Astronomy
PHD, Oklahoma State University, 1995

Dvorak, Bruce D, Associate Professor
Land Arch & Urban Planning
MLA, University of Illinois at Urbana-Champaign, 1994

Dwivedi, Priyanka, Assistant Professor
Management
PHD, The Pennsylvania State University, 2017

Dworkin, Ira M, Associate Professor
English
PHD, City University of New York, 2003

Dwyer, William G, Lecturer
George Bush School of Govern
JD, Rutgers Law School, 2004

Dye, Richard T, Clinical Professor
Finance
PHD, Texas A&M University, 1993

Dyer, Megan K, Lecturer
Political Science
PHD, Texas A&M University, 2017

Dykema, Kenneth J, Professor
Mathematics
PHD, University of California, Berkeley, 1993

Eades, Erma S, Professor
Vet Large Animal Clinical Sc
PHD, University of Georgia, 1988
DVM, Louisiana State University, 1982

Earhart, Amy E, Associate Professor
English
PHD, Texas A&M University, 1999

Earnest, David, Professor
College of Medicine
PHD, Northwestern University, Evanston, 1984

Easterwood, Leslie A, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1995

Easwaran, Kenneth K, Associate Professor
Philosophy & Humanities
PHD, University of California Berkeley, 2008

Ebbole, Daniel J, Professor
Plant Pathology & Microbiology
PHD, Purdue University, 1988

Echols, Katherine E, Instructional Associate Professor
Liberal Studies
PHD, University of Houston, 2015

Eckel, Catherine C, Distinguished Professor
Economics
PHD, University of Virginia, 1983

Eckhause, Melissa, Adjunct Professor
School of Law
JD, University of Detroit, 1998

Eckman, Stacy L, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2001

Eckstein, Gabriel E, Professor
School of Law
JD, American University Washington College of Law, 1995

Economou, Ioannis, Professor
Texas A&M University at Qatar
PHD, Johns Hopkins University, 1993

Eden, Lorraine A, Professor
Management
PHD, Dalhousie University, Canada, 1976

Edens, John F, Professor
Psychological & Brain Sciences
PHD, Texas A&M University, 1996

Edens, Pamela S, Lecturer
Psychological & Brain Sciences
PHD, Texas A&M University, 1997

Edwards III, George C, Distinguished Professor Emeritus
Political Science
PHD, University of Wisconsin - Madison, 1973

Edwardson, Jeffrey C, Senior Lecturer
Economics
PHD, Texas A&M University, 2000

Efendiev, Yalchin R, Professor
Mathematics
PHD, California Institute of Technology, 1999

Ege, Matthew S, Assistant Professor
Accounting
PHD, The University of Texas at Austin, 2013

Egenolf, Susan B, Associate Professor
English
PHD, Texas A&M University, 1995

Ehsani, Mehrdad, Professor
Electrical & Computer Eng
PHD, University of Wisconsin - madison, 1981

Eide, Marian, Associate Professor
English
PHD, University of Pennsylvania, 1994

Eilers, Howard F, Associate Professor
Visualization
MFA, Ohio University, 1964

Eitan, Shoshana, Associate Professor
Psychological & Brain Sciences
PHD, Weizmann Institute of Science, 1997

Eknoyan, Ohannes, Senior Professor
Electrical & Computer Eng
PHD, Columbia University, 1975

Eksin, Ceyhun, Assistant Professor
Industrial & Systems Eng
PHD, University of Pennsylvania, 2015

El Borgi, Sami, Professor
Texas A&M University at Qatar
PHD, Cornell University, 1993

El-Guindy, Ahmad M, Associate Professor
Texas A&M University at Qatar
PHD, University of Wisconsin - Madison, 2004

El-Halwagi, Mahmoud M, Professor
Chemical Engineering
PHD, University of California, Los Angeles, 1990

Elabd, Yossef A, Professor
Chemical Engineering
PHD, Johns Hopkins University, 2001

Elabd, Yossef A, Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2001

Elbashir, Nimir O, Professor
Texas A&M University at Qatar
PHD, Auburn University, 2004

Elbashir, Nimir O, Professor
Texas A&M University at Qatar
PHD, Auburn University, 2004

Elbert, Chanda D, Associate Professor
Ag Leadership, Educ & Comm
PHD, The Pennsylvania State University, 2000

Elgindi, Ali, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, University of Chicago, 2011

Elgindi, Mohamed B, Instructional Professor
Texas A&M University at Qatar
PHD, Michigan State University, 1987

Eliot, John F, Clinical Associate Professor
Health & Kinesiology
PHD, University of Virginia, 1998

Eller, Michael J, Research Assistant Professor
Chemistry
PHD, Texas A&M University, 2012

Elliot, John F, Professor
Ag Leadership, Educ & Comm
PHD, Ohio State University, 1988

Elliott, Frank W, Professor
School of Law
JD, The University of Texas School of Law, 1957

Elliott, Kay E, Adjunct Professor
School of Law
JD, University of Oklahoma, 1964

Elliott, Timothy R, Distinguished Professor
Educational Psychology
PHD, University of Missouri - Columbia, 1987

Ellis, Debra R, Senior Lecturer
Construction Science
JD, Baylor University, 1993

Ellis, Gary D, Professor
Recreation, Park & Tourism Sc
PHD, North Texas State University, 1983

Ellis, Michael L, Clinical Associate Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1985

Elmageed, Zakaria A, Assistant Professor
College of Pharmacy
PHD, Helwan University, 2004

Elms, Rene D, Associate Professor of the Practice
College of Engineering
PHD, Texas A&M University, 2009

Elsheikh, Aymen E, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, Indiana University-Bloomington, 2012

Elwany, Alaa Mohamed, Assistant Professor
Materials Science & Engr
PHD, Georgia Institute of Technology, 2009

Elwany, Alaa Mohamed H, Assistant Professor
Industrial & Systems Eng
PHD, Georgia Institute of Technology, 2009

Emre, Side, Associate Professor
History
PHD, University of Chicago, 2009

Engelen, Marielle P, Associate Professor
Health & Kinesiology
PHD, Maastricht University, Netherlands, 2000

England, Peter S, Instructional Associate Professor
Civil & Environmental Engineering
PHD, Texas Tech University, 2011

Engler, Cady R, Senior Professor
Biological & Agricultural Eng
PHD, University of Waterloo, 1980

Enjeti, Prasad N, Professor
Electrical & Computer Eng
PHD, Concordia University, Montreal, 1984

Entesari, Kamran, Professor
Electrical & Computer Eng
PHD, University of Michigan, 2006

Epifanio, Craig C, Associate Professor
Atmospheric Sciences
PHD, University of Washington, 1999

Epstein, Janice L, Instructional Associate Professor
Mathematics
PHD, Texas A&M University, 1992

Erbeli, Florina, Assistant Professor
Educational Psychology
PHD, University of Ljubljana, 2015

Erdelyi, Tamas, Professor
Mathematics
PHD, University of Southern Carolina, 1989

Erickson, James W, Associate Professor
Biology
PHD, University of Wisconsin - madison, 1989

Eriksson, Marian, Associate Professor
Ecosystem Science & Mgmt
PHD, University of Minnesota, 1989

Erminy Castillo, Marcel, Associate Professor of the Practice
Architecture
PHD, Central University of Venezuela, 1987

Erraguntla, Madhav, Associate Professor of the Practice
Industrial & Systems Eng
PHD, Texas A&M University, 1996

Erturk, Bilal, Visiting Assistant Professor
Finance
PHD, Texas A&M University, 2006

Erukhimova, Tatiana L, Instructional Associate Professor
Physics & Astronomy
PHD, Institute of Applied Physics, Russian Academy of Sciences, 1999

Escamilla Jr, Edelmiro E, Instructional Associate Professor
Construction Science
PHD, Texas A&M University, 2011
MAR, Texas A&M University, 2002

Escobar-Lemmon, Maria, Professor
Political Science
PHD, The University of Arizona, 2000

Eslami, Zohreh R, Professor
Texas A&M University at Qatar
PHD, University of Illinois at Urbana-Champaign, 1992

Espina, Eduardo D, Professor
Hispanic Studies
PHD, Washington University in St. Louis, 1987

Esplin, Bryn S, Assistant Professor
College of Medicine
JD, University of Nevada, 2014

Esquivel, Jose G, Associate Professor
Architecture
MAR, Ohio State University, 1998

Esteve-Gasent, Maria D, Assistant Professor
Veterinary Pathobiology
PHD, Universidad de Valencia, Spain, 2003

Etchells, Matthew, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2018

Ettekal, Andrea V, Assistant Professor
Recreation, Park & Tourism Sc
PHD, Arizona State University, 2014

Ettekal, Idean, Assistant Professor
Educational Psychology
PHD, Arizona State University, 2016

Ettelbrick, Kelli L, Adjunct Assistant Professor
Pediatric Dentistry
DDS, University of Iowa, 1996

Eubanks, Micky D, Professor
Entomology
PHD, University of Maryland, College Park, 1997

Eusebi, Ricardo, Associate Professor
Physics & Astronomy
PHD, University of Rochester, 2006

Evans, Dwayne E, Clinical Assistant Professor
Public Health Sciences
DDS, Texas A&M University Baylor College of Dentistry, 1990

Evans, Timothy L, Adjunct Professor
School of Law
JD, University of Arkansas Fayetteville, 2008

Everett, Mark E, Professor
Geology & Geophysics
PHD, University of Toronto, 1991

Everett-Houser, Joan M, Instructional Assistant Professor
College of Pharmacy
PHARM D, University of the Pacific, 1983

Ewing, Ryan C, Associate Professor
Geology & Geophysics
PHD, The University of Texas - Austin, 2009

Eytan, Ron I, Assistant Professor
Marine Biology
PHD, Louisiana State University, 2010

Ezell-Mainzer, Margaret, University Distinguished Professor
English
PHD, Cambridge University, 1981

Ezzo, Paul J, Adjunct Assistant Professor
Periodontics
PHD, Texas A&M University Baylor College of Dentistry, 2000
DDS, Baylor College of Dentistry, 1983

Fadlelmula, Mohamed, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, Middle East Technical University, 2012

Faghihi, Vahid, Lecturer
College of Engineering
PHD, Texas A&M University, 2014

Fahrenwald, Carl, Clinical Assistant Professor
Educ Admn & Human Resource Dev
EDD, University of South Dakota, 1999

Fahrenwald, Nancy Lynn, Professor
College of Nursing
PHD, University of Nebraska Medical Center, 2002

Fairchild, Amy L, Professor
Health Policy & Management
PHD, Columbia University, 1997

Fajt, Virginia R, Clinical Professor
Vet Physiology & Pharmacology
PHD, Iowa State University, 2000
DVM, Auburn University, 1995

Fallah Abed, Pooria, Clinical Assistant Professor
Periodontics
DDS, School of Dentistry Qazvin, 2009

Falzarano, Jeffrey M, Professor
Ocean Engineering
PHD, University of Michigan, Ann Arbor, 1990

Fang, Gwo-Ping, Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1996

Fang, Lei, Assistant Professor
Chemistry
PHD, Northwestern University, 2010

Fang, Lei, Assistant Professor
Materials Science & Engr
PHD, Northwestern University, 2010

Fang, Zheng, Assistant Professor
Economics
PHD, University of California, San Diego, 2015

Farnell, Morgan B, Associate Professor
Poultry Science
PHD, Texas A&M University, 2003

Farnell, Yuhua Z, Instructional Assistant Professor
Poultry Science
PHD, Texas A&M University, 2002

Farooqi, Mohammed Junaid, Instructional Assistant Professor
College of Science
PHD, University of Texas San Antonio, 2018

Farris, Charlotte A, Clinical Assistant Professor
College of Pharmacy
DOC, The University of Texas - Austin, 2009

Faulkner, Matthew T, Visiting Lecturer
Architecture
MAR, Texas A&M University, 2006

Feagin, Joe R, Distinguished Professor
Sociology
PHD, Harvard University, 1966

Feagin, Russell A, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 2003

Feare, Donald Duffield, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 1996

Fehr, Sara K, Clinical Assistant Professor
Health & Kinesiology
PHD, University of Cincinnati, 2015

Feigenbaum, Leslie H, Senior Lecturer
Construction Science
MS, Texas A&M University, 1985

Feldman, Richard M, Senior Professor
Industrial & Systems Eng
PHD, Northwestern University, 1975

Felton Odom, Summer R, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2011

Felts, Jonathan R, Assistant Professor
Mechanical Engineering
DEN, University of Illinois Urbana Champaign, 2013

Feng, Jian Q, Professor
Biomedical Sciences
PHD, University of Connecticut, 1991

Ferdinand, Alva O, Assistant Professor
Health Policy & Management
PHD, University of Alabama Birmingham, 2013

Fernandez-Solis, Jose L, Instructional Associate Professor
Construction Science
PHD, Georgia Institute of Technology, 2006

Fernando, Sandun D, Professor
Biological & Agricultural Eng
PHD, University of Nebraska, 2003

Fernsler Terrence, Lecturer
George Bush School of Govern
PHD, James Madison University, 2017

Ferris, Thomas K, Associate Professor
Industrial & Systems Eng
PHD, University of Michigan - Ann Arbor, 2010

Fertitta, Kelli, Instructional Assistant Professor
Maritime Business Administration
JD, South Texas College of Law, 2013

Ficht, Allison R, Professor
College of Medicine
PHD, Vanderbilt University, 1980

Fields, Sherecce A, Associate Professor
Psychological & Brain Sciences
PHD, University of South Florida, 2008

Fields, Steven D, Adjunct Professor
School of Law
JD, University of Oklahoma School of Law, 1986

Fields, Susan S, Visiting Assistant Professor
Teaching, Learning & Culture
EDD, Boston University, 2017

Fierke, Carol A, Provost & Executive Vice President
Chemistry
PHD, Brandeis University, 1984

Figlus, Jens, Associate Professor
Ocean Engineering
PHD, University of Delaware, 2010

Filippi, Anthony M, Associate Professor
Geography
PHD, University of South Carolina, 2003

Finch, Krista S, Instructional Assistant Professor
Visualization
MFA, Maryland Institute College of Art, 2000

Finch, Sherman S, Assistant Professor
Visualization
MFA, Maryland Institute College of Art, 1998

Fink, Klaus, Senior Lecturer
Eng Tech & Ind Distribution
PHD, Case Western Reserve University, 1995

Fink, Rainer J, Associate Professor
Biomedical Engineering
PHD, Texas A&M University, 1995

Fink, Rainer J, Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1995

Finkelstein, Alexander, Professor
Physics & Astronomy
PHD, Lauda Institute for Theoretical Physics, 1972

Finlayson, Scott A, Associate Professor
Soil & Crop Sciences
PHD, University of Calgary, 1994

Finn, Tiffany R, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 1992

Fischer, James, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, University of Texas Health Science Center at San Antonio, 2012

Fischer, Rebecca Susann Bryson, Assistant Professor
Epidemiology & Biostatistics
PHD, The University of Texas School of Public Health, 2014

Fitzgerald, Lee A, Professor
Wildlife & Fisheries Sciences
PHD, University of New Mexico, 1993

Fitzgerald, Tristan, Assistant Professor
Finance
PHD, University of California, Berkeley, 2018

Fitzsimmons, Jessica N, Assistant Professor
Oceanography
PHD, Massachusetts Institute of Technology, 2013

Flagg, James C, Associate Professor
Accounting
PHD, Texas A&M University, 1988

Fleming, Kenneth J, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2016

Flint, Diane J, Associate Professor
Diagnostic Sciences
DDS, Baylor College of Dentistry, 1986

Flint, Gerald David, Clinical Professor
Management
PHD, Texas A&M University, 1997

Fluckey, James D, Professor
Health & Kinesiology
PHD, The Pennsylvania State University, 1995

Fogarty, Melissa S, Clinical Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2012

Folden III, Charles M, Associate Professor
Chemistry
PHD, University of California, Berkeley, 2004

Foote, Lorien L, Professor
History
PHD, University of Oklahoma - Norman, 1999

Foran, Alexandra, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2018

Ford, Albert L, Professor
Physics & Astronomy
PHD, University of Texas at Austin, 1972

Ford, David N, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1995

Ford, John R, Associate Professor
Nuclear Engineering
PHD, University of Tennessee, 1992

Forrest, David W, Professor
Animal Science
PHD, University of Wyoming, 1979

Fortenberry, Brent R, Assistant Professor
Architecture
PHD, Boston University, 2013

Fortney, Suraya, Professor
School of Law
DJS, Columbia University School of Law, 1997
LLM, Columbia University School of Law, 1992
JD, Antioch School of Law, 1977

Fortunato, David, Associate Professor
Political Science
PHD, Rice University, 2012

Fossett, Mark A, Professor
Sociology
PHD, The University of Texas - Austin, 1983

Foster, Holly A, Professor
Sociology
PHD, University of Toronto, 2001

Foucart, Simon, Associate Professor
Mathematics
PHD, University of Cambridge, 2005

Fournier, Constance J, Clinical Professor
Educational Psychology
PHD, University of Texas at Austin, 1987

Fowler, Rhonda M, Clinical Assistant Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 2013

Francis Jr, James, Lecturer
English
PHD, Middle Tennessee State University, 2010

Francis, Heather, Associate Professor
College of Medicine
PHD, Texas A&M Health Science Center, 2010

Francis, Heather L, Associate Professor
College of Medicine
PHD, Texas A&M Health Science Center, 2010

Frank-Cannon, Tamy C, Clinical Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2005
DVM, Texas A&M University, 1996

Frauenfeld, Oliver W, Associate Professor
Geography
PHD, University of Virginia, 2003

Frech, Devek K, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1986

Freed, Alan D, Professor
Biomedical Engineering
DEN, University of Wisconsin - Madison, 1985

Freed, Alan D, Professor
Mechanical Engineering
DEN, University of Wisconsin - Madison, 1985

Fridley, Jennifer, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Mississippi State University, 2014

Friedman, Jennifer Diane, Clinical Assistant Professor
College of Medicine
MD, University of California, San Francisco, 1997

Friedman, Nicole M, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 2006

Fries, Rainer J, Associate Professor
Physics & Astronomy
PHD, University of Regensburg, Germany, 2001

Fry, Edward S, University Distinguished Professor
Physics & Astronomy
PHD, University of Michigan, 1969

Fuentes, Ana Marcela, Assistant Professor
English
PHD, Georgia State University, 2016
MFA, Iowa Writers Workshop, 2009

Fuhrmann, Matthew C, Professor
Political Science
PHD, University of Georgia, 2008

Fujiwara, Masami, Associate Professor
Wildlife & Fisheries Sciences
PHD, Massachusetts Inst of Technology, 2002

Fullerton, Tracy L, Associate Professor of the Practice
College of Engineering
PHD, Texas A&M University, 2011

Fulling, Stephen A, Professor
Mathematics
PHD, Princeton University, 1972

Fulton, Sarah A, Associate Professor
Political Science
PHD, University of California, Davis, 2006

Fuqua, Amy Marie, Adjunct Professor
School of Law
JD, University of Houston Law Center, 1997

Furth, Brett H, Instructional Assistant Professor
Liberal Studies
PHD, Texas A&M University, 2015

Furuta, Richard K, Professor
Computer Science & Engineering
PHD, University of Washington, 1986

Gabbai, Francois P, Professor
Chemistry
PHD, Technische Universitat Munchen, Germany, 1999

Gabriel, Eleanor L, Adjunct Professor
School of Law
JD, Texas Tech School of Law, 1980

Gaddy, Dana, Professor
Vet Integrative Biosciences
PHD, Baylor College of Medicine, 1991

Gaede, Holly C, Instructional Associate Professor
Chemistry
PHD, University of California, Berkeley, 1995

Gagliardi, Carl A, Professor
Physics & Astronomy
PHD, Princeton University, 1982

Gagne, Jeffrey R, Assistant Professor
Educational Psychology
PHD, Boston University, 2008

Gagnon, Zachary, Associate Professor
Chemical Engineering
PHD, University of Notre Dame, 2009

Gaharwar, Akhilesh K, Assistant Professor
Biomedical Engineering
PHD, Purdue University, 2011

Gaharwar, Akhilesh K, Assistant Professor
Materials Science & Engr
PHD, Purdue University, 2011

Galan Jhenny, Instructional Assistant Professor
Foundational Sciences
PHD, University of Connecticut, 2006

Galanter, Philip, Associate Professor
Visualization
MFA, School of Visual Arts, 1999

Galdo, Juan, Associate Professor
Hispanic Studies
PHD, University of Colorado, 2003

Galvan Mandujano, Martha C, Lecturer
Liberal Studies
PHD, The University of Oklahoma, 2015

Gamache, Kevin, Lecturer
George Bush School of Govern
PHD, Texas A&M University, 2014

Gan, Jianbang, Professor
Ecosystem Science & Mgmt
PHD, Iowa State University, 1990

Gan, Li, Professor
Economics
PHD, University of California, Berkeley, 1998

Gannaway, Mark E, Clinical Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1981

Ganz, Jennifer, Professor
Educational Psychology
PHD, University of Kansas, 2002

Gao, Huajian, Visiting Professor
College of Engineering
PHD, Harvard University, 1988

Gao, Huajian, Visiting Professor
Mechanical Engineering
PHD, Harvard University, 1988

Gao, Huilin, Associate Professor
Civil & Environmental Engineering
PHD, Princeton University, 2005

Gao, Li, Visiting Assistant Professor
Mathematics
PHD, University of Illinois, 2018
PHD, University of Illinois-Urbana-Champaign, 2018

Garay, Juan A, Professor
Computer Science & Engineering
PHD, The Pennsylvania State University, 1989

Garcia Sanchez, Guillermo J, Associate Professor
School of Law
DJS, Harvard Law School, 2017
LLM, Harvard Law School, 2012
LLM, Fletcher School of Law & Diplomacy, 2011

Garcia, Alfredo A, Professor
Industrial & Systems Eng
PHD, University of Michigan, 1997

Garcia, Deni S, Adjunct Professor
School of Law
JD, Texas Wesleyan University, 2000

Garcia, Leslie L, Instructional Assistant Professor
Animal Science
PHD, Texas A&M University, 2015

Garcia, Luis R, Professor
Biology
DDS, Texas A&M University Baylor College of Dentistry, 1999

Garcia, Luis R, Professor
Biology
PHD, University of Texas at Austin, 1996

Garcia, Luis R, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 1999

Garcia, Robert, Instructional Assistant Professor
Hlth Promotion & Comm Hlth Sci
PHD, University of Southern California, 2017

Garcia, Robert K, Associate Professor
Philosophy & Humanities
PHD, University of Notre Dame, 2009

Garcia, Tanya, Associate Professor
Statistics
PHD, Texas A&M University, 2011

Gardner, Wilford D, Senior Professor
Oceanography
PHD, Massachusetts Inst of Technology, 1978

Garey, William D, Executive Professor
Finance
MBA, University of Houston - Clear Lake, 1980

Gariazzo, Mariana S, Instructional Assistant Professor
Performance Studies
DOC, University of Texas, 2005

Garney, Whitney R, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2015

Garritano, Carmela, Associate Professor
International Studies
PHD, Michigan State University, 2001

Gary, Jodie C, Assistant Professor
College of Nursing
PHD, University of Texas at Tyler, 2012

Garza, Brent A, Assistant Professor
Accounting
PHD, University of Illinois-Urbana-Champaign, 2017

Garza, Veronica, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2009

Garza, Victor M, Clinical Assistant Professor
College of Medicine
MD, Baylor College of Medicine, 2004

Gashev, Anatoliy, Associate Professor
College of Medicine
PHD, Pavlov Institute of Physiology, 1989

Gashev, Anatoliy A, Associate Professor
College of Medicine
PHD, Pavlov Institute of Physiology, 1989

Gaspar, Julian, Clinical Professor
Finance
PHD, Georgetown University, 1981

Gastel, Barbara J, Professor
Vet Integrative Biosciences
MD, Johns Hopkins University, 1978

Gatlin III, Delbert M, Professor
Wildlife & Fisheries Sciences
PHD, Mississippi State University, 1983

Gatson, Sarah N, Associate Professor
Sociology
PHD, Northwestern University, 1999

Gause III, Francis G, Professor
International Affairs
PHD, Harvard University, 1987

Gautam, Natarajan, Professor
Industrial & Systems Eng
PHD, University of North Carolina at Chapel Hill, 1997

Gaynanova, Irina, Assistant Professor
Statistics
PHD, Cornell University, 2015

Geha, Chadi, Lecturer
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2015

Gehring, Kerri B, Professor
Animal Science
PHD, Texas A&M University, 1994

Geismar, Harry N, Professor
Information & Operations Mgmt
PHD, University of Texas at Dallas, 2003

Geismar, Karen S, Lecturer
Nutrition & Food Science
PHD, Texas Woman's University, Denton, 1998

Geller, Mark S, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1973

Genecov, Jeffrey S, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1985

Gentry, Terry J, Professor
Soil & Crop Sciences
PHD, University of Arizona, 2003

Geoffroy, Cedric G, Assistant Professor
College of Medicine
PHD, University of Cambridge, 2008

George, James P, Professor
School of Law
JD, The University of Tulsa, 1978

George, Jordana, Clinical Assistant Professor
Information & Operations Mgmt
PHD, Baylor University, 2019

George, Theodore D, Associate Professor
Philosophy & Humanities
PHD, Villanova University, 2000

Georghiades, Costas N, Professor
Electrical & Computer Eng
PHD, Washington University in St. Louis, 1985

Gerakis, Alexandros, Assistant Professor
Aerospace Engineering
PHD, University College London, 2014

Geunes, Joseph P, Professor
Industrial & Systems Eng
PHD, Pennsylvania State University, 1999

Geva, Anat M, Professor
Architecture
PHD, Texas A&M University, 1995

Geva, Nehemia, Associate Professor
Political Science
PHD, Ohio State University, 1977

Gharaibeh, Nasir G, Associate Professor
Civil & Environmental Engineering
PHD, University of Illinois, 1997

Ghrayeb, Ali A, Professor
Texas A&M University at Qatar
PHD, University of Arizona, 2000

Giardino, John R, Professor
Geology & Geophysics
PHD, University of Nebraska, Lincoln, 1979

Gibbs, Brian C, Visiting Lecturer
Architecture
MAR, Texas A&M University, 2006

Gibbs, Holly C, Lecturer
Biomedical Engineering
PHD, Texas A&M University, 2015

Gibson, Jeremy L, Clinical Associate Professor
College of Medicine
MD, University of Texas Medical Branch at Galveston, 1998

Gibson, Tobias, Lecturer
George Bush School of Govern
PHD, Washington University in St. Louis, 2006

Giese, Benjamin S, Professor
Oceanography
PHD, University of Washington, 1989

Giger, Maryellen, Visiting Professor
College of Engineering
PHD, University of Chicago, 1985

Gildin, Eduardo, Associate Professor
Petroleum Engineering
PHD, University of Texas, 2006

Giles, Erin D, Assistant Professor
Nutrition & Food Science
PHD, McMaster University, 2015

Gill, Clare A, Professor
Animal Science
PHD, University of Adelaide, Australia, 2000

Gill, Jason J, Assistant Professor
Animal Science
PhD, University of Guelph, 2006

Gill, Kory L, Clinical Assistant Professor
College of Medicine
DO, Kansas City University of Medical and Biosciences, 2005

Gilmour, Lindsey J, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2009

Gilreath, Tamika D, Associate Professor
Health & Kinesiology
PHD, The Pennsylvania State University, 2007

Gilson, Carly B, Assistant Professor
Educational Psychology
PHD, Vanderbilt University, 2017

Girimaji, Sharath S, Professor
Aerospace Engineering
PHD, Cornell University, 1990

Girimaji, Sharath S, Professor (courtesy appointment)
Mechanical Engineering
PHD, Cornell University, 1990

Girimaji, Sharath S, Department Head
Ocean Engineering
PHD, Cornell University, 1990

Giusti, Cecilia Hundskopf, Associate Professor
Land Arch & Urban Planning
PHD, The University of Texas - Austin, 2001

Gladysz, John A, University Distinguished Professor
Chemistry
PHD, Stanford University, 1974

Glaser, Shannon, Professor
College of Medicine
PHD, Texas A&M University Health Science Center, 2006

Glaser, Shannon S, Associate Professor
College of Medicine
PHD, Texas A&M University Health Science Center, 2006

Glasner, Margaret E, Associate Professor
Biochemistry & Biophysics
PHD, Massachusetts Institute of Technology, 2003

Glass, Amy J, Associate Professor
Economics
PHD, University of Pennsylvania, 1993

Glass, Kati P, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2012

Glenn, Gayle, Adjunct Assistant Professor
Orthodontics
MSD, Baylor College of Dentistry, 1984

Glickman, Gerald N, Professor
Endodontics
DDS, The Ohio State University Columbus, OH, 1978

Glover, Charles J, Senior Professor
Chemical Engineering
PHD, Rice University, 1975

Glowacki, Kevin T, Associate Professor
Architecture
PHD, Bryn Mawr College, 1991

Goddard, Tara B, Assistant Professor
Land Arch & Urban Planning
PHD, Portland State University, 2017

Godwin, Allen D, Associate Professor of the Practice
College of Engineering
PHD, Texas A&M University, 1997

Goebel, Frank E, Professor
Anthropology
PHD, University of Alaska Fairbanks, 1993

Gohil, Vishal M, Associate Professor
Biochemistry & Biophysics
PHD, Wayne State University, 2005

Goidel, Robert K, Professor
Communication
PHD, University of Kentucky, 1993

Gold Bouchot, Gerardo, Professor
Oceanography
PHD, CINVESTAV Merida, 1991

Goldberg, Daniel W, Assistant Professor
Computer Science & Engineering
PHD, University of Southern California, 2010

Goldberg, Daniel W, Associate Professor
Geography
PHD, University of Southern California, 2010

Golding, Michael C, Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2003

Goldman, Michael R, Adjunct Professor
School of Law
JD, South Texas College of Law, 1999

Goldsmith, Patrick A, Associate Professor
Sociology
PHD, University Of Arizona, 1999

Golsan, Richard J, University Distinguished Professor
International Studies
PHD, University of North Carolina at Chapel Hill, 1981

Gomer, Richard H, Professor
Biology
PHD, California Institute of Technology, 1983

Gomes Verocai, Guilherme, Clinical Assistant Professor
Veterinary Pathobiology
PHD, University of Calgary, 2015

Gomillion, David L, Clinical Assistant Professor
Information & Operations Mgmt
PHD, Florida State University, 2013

Gonezen, Sevan, Assistant Professor
Biomedical Engineering
PHD, Rensselaer Polytechnic Institute, 2011

Gonezen, Sevan, Assistant Professor
Mechanical Engineering
PHD, Rensselaer Polytechnic Institute, 2011

Gonzales, Molly McCarty, Instructional Assistant Professor
Vet Integrative Biosciences
EDD, Pepperdine University, 2017

Gonzalez Carranza, Marianela, Clinical Assistant Professor
Oral & Maxillofacial Surgery
DDS, Universidad Central de Venezuela, 1991

Gonzalez, Carlos F, Professor
Plant Pathology & Microbiology
PHD, University of Nebraska - Lincoln, 1978

Gonzalez, Janet P, Adjunct Assistant Professor
Diagnostic Sciences
DDS, Texas A&M University Baylor College of Dentistry, 1991

Gonzalez, Jorge A, Clinical Assistant Professor
Oral & Maxillofacial Surgery
DDS, University of Costa Rica, 1997

Gooch, Bruce S, Associate Professor
Computer Science & Engineering
PHD, University of Utah, 2003

Goodey, Joanna R, Instructional Assistant Professor
Chemistry
PHD, University of Houston, 2001

Goodman, John T, Clinical Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1968

Goodson, Patricia, Professor
Health & Kinesiology
PHD, University of Texas, 1996

Gopalakrishnan, Ganesa, Senior Lecturer
Chemistry
PHD, University of Madras, India, 1977

Gopalakrishnan, Lekha, Adjunct Professor
School of Law
JD, University of Texas - Austin, 2000
PHD, Northwestern University, 1995

Gopalswamy, Swaminathan, Professor of the Practice
Mechanical Engineering
PHD, University of California, 1991

Gopinath, Gokul, Research Assistant Professor
Periodontics
PHD, Manipal University, India, 2010

Gordon, Randy D, Executive Professor
School of Law
PHD, University of Edinburgh, 2009
LLM, Columbia Law School, 1992
JD, Washburn University School of Law, 1991

Gordon, Robert B, Associate Professor of Practice
Ocean Engineering
PHD, University of Rhode Island, 1982

Gordon, Sonya G, Professor
Vet Small Animal Clinical Sc
DVM, University of Guelph, 1994

Gorman, Dennis M, Professor
Epidemiology & Biostatistics
PHD, University of Essex, 1988

Goswami, Souvik, Visiting Assistant Professor
Mathematics
PHD, University of Alberta, 2015

Gottlieb, Jessica A, Assistant Professor
International Affairs
PHD, Stanford University, 2013

Goulart, Ana E, Associate Professor
Eng Tech & Ind Distribution
PHD, Georgia Institute of Technology, 2005

Govindarajan, Sujatha P, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 1998

Goydan, David J, Adjunct Assistant Professor
Comprehensive Dentistry
DMD, University of Pittsburgh School of Dental Medicine, 1977

Grace, Jacquelyn K, Assistant Professor
Wildlife & Fisheries Sciences
PHD, Wake Forest University, 2014

Graf, Kelly E, Associate Professor
Anthropology
PHD, University of Nevada, Reno, 2008

Graham Jr, Cole B, Executive Professor
Public Service & Administration
PHD, University of South Carolina, 1971

Graham, Amber Marie, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of Missouri, 2017

Gramann, James H, Professor
Recreation, Park & Tourism Sc
PHD, University of Illinois at Urbana-Champaign, 1980

Granger, Harris J, Distinguished Professor
College of Medicine
PHD, University of Mississippi, 1970

Grant, William E, Professor
Wildlife & Fisheries Sciences
PHD, Colorado State University, 1974

Grasley, Zachary C, Professor
Civil & Environmental Engineering
PHD, University of Illinois Urbana Champaign, 2006

Grasley, Zachary C, Professor
Materials Science & Engr
PHD, University of Illinois Urbana Champaign, 2006

Gratz, Paul V, Associate Professor
Computer Science & Engineering
PHD, University of Texas, 2008

Gratz, Paul V, Associate Professor
Electrical & Computer Eng
PHD, University of Texas, 2008

Grau, James W, Professor
Psychological & Brain Sciences
PHD, University of Pennsylvania, 1985

Graul, Michael H, Associate Professor of the Practice
Industrial & Systems Eng
PHD, Texas A&M University, 1995

Graves, Gregory H, Professor of Practice
Industrial & Systems Eng
PHD, Texas A&M University, 2006

Gray, Phillip W, Assistant Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2006

Grayson, Stephen E, Clinical Assistant Professor
College of Pharmacy
DOC, University of Texas, 2002

Green, Eleanor M, Professor
Vet Large Animal Clinical Sc
DVM, Auburn University, 1973

Green, Jeremiah, Associate Professor
Accounting
DBA, University of North Carolina - Chapel Hill, 2010

Green, John S, Clinical Professor
Health & Kinesiology
PHD, Texas A&M University, 1996

Green, Lisa L, Adjunct Assistant Professor
Health & Kinesiology
PHD, Texas Women's University, 2001

Green, Micah, Associate Professor
Chemical Engineering
PHD, Massachusetts Institute of Technology, 2007

Green, Micah, Associate Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2007

Green, Michael Z, Professor
School of Law
JD, Loyola University - Chicago, 1992

Green, Thomas A,
Anthropology
PHD, University of Texas, 1974

Greenbaum, Ira F, Professor
Biology
PHD, Texas Tech University, 1978

Greenwood, C Michael, Clinical Professor
Health & Kinesiology
PHD, Texas Woman's University, 1990

Greenwood, Lori, Clinical Professor
Health & Kinesiology
PHD, Oregon State University, 1995

Greer, Robert A, Assistant Professor
Public Service & Administration
PHD, University of Kentucky, 2013

Gregory, Carl A, Assistant Professor
Biomedical Engineering
PHD, University of Manchester, 1999

Gregory, Carl A, Associate Professor
College of Medicine
PHD, University of Manchester, 1999

Griffin IV, John F, Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 2004

Griffin, Cleet E, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1990

Griffin, Dicky D, Clinical Professor
Vet Large Animal Clinical Sc
DVM, Oklahoma State University, 1975

Griffin, James M, Senior Professor
Public Service & Administration
PHD, University of Pennsylvania, 1971

Griffin, Ricky W, University Distinguished Professor
Management
PHD, University of Houston, 1978

Griffin, Robert J, Associate Professor
English
PHD, Yale University, 1985

Griffin, Stephen J, Clinical Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1985

Griffin, Whitney N, Lecturer
Horticultural Sciences
PHD, University of Maryland, 2014

Griffing, Lawrence R, Associate Professor
Biology
PHD, Stanford University, 1981

Griffith III, William, Professor
College of Medicine
PHD, The University of Texas Medical Branch at Galveston, 1980

Griffith, David Andrew, Professor
Marketing
PHD, Kent State University, 1997

Griffith, Jennifer M, Instructional Assistant Professor
Health Policy & Management
DrPH, University of North Carolina Chapel Hill, 2004

Griffith, Karee, Lecturer
Teaching, Learning & Culture
PHD, University of Mary Hardin-Baylor, 1993

Griffiths, Garth R, Clinical Assistant Professor, Director
Periodontics
DDS, The University of Texas Health Science Center at San Antonio, 1992

Grigorchuk, Rostislav, University Distinguished Professor
Mathematics
PHD, Moscow State University of Lomomosov, 1986

Grimes, Millie A, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, University of California, 2015

Grisham, Ray F, Lecturer
Construction Science
JD, University of Texas at Austin, 1972

Grogan, David M, Clinical Associate Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1981

Gronberg, Timothy J, Professor
Economics
PHD, Northwestern University, 1978

Groppe, Jay C, Associate Professor
Biomedical Sciences
PHD, University of California at Santa Barbara, 1991

Gross, Dennis C, Professor
Plant Pathology & Microbiology
PHD, University of California, Davis, 1976

Grossman, Ethan L, Professor
Geology & Geophysics
PHD, University of Southern California, 1982

Grossman, Steven D, Associate Professor
Accounting
PHD, Tufts University, 1972

Grunlan, Jaime C, Professor
Mechanical Engineering
PHD, University of Minnesota, 2001

Grunlan, Jaime C, Professor
Materials Science & Engr
PHD, University of Minnesota, 2001

Grunlan, Melissa A, Professor
Biomedical Engineering
PHD, University of South Carolina, 2004

Grunlan, Melissa A, Professor
Materials Science & Engr
PHD, University of South Carolina, 2004

Gu, Guofei, Associate Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 2008

Guerillot, Dominique R, Professor
Texas A&M University at Qatar
PHD, Universite De Provence, 1982

Guermond, Jean-Luc, Professor
Mathematics
PHD, Sorbonne Universities, 1995

Guerra Nakamura, Fabiola, Senior Lecturer
Computer Science & Engineering
PHD, Federal University of Minas Gerais, 2010

Guinn III, James R, Instructional Assistant Professor
Health & Kinesiology
EDD, Abilene Christian University, 2017

Guiora, Amos, Adjunct Professor
School of Law
JD, Case Western Reserve Law School, 1985

Guirguis, Amber, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, The Ohio State University College of Dentistry, 2010

Guiseppe Elie, Anthony, Professor
Biomedical Engineering
PHD, Massachusetts Institute of Technology, 1983

Guleria, Rakeshwar, Research Assistant Professor
College of Medicine
PHD, University of Lucknow, 2002

Guleria, Rakeshwar S, Research Assistant Professor
College of Medicine
PHD, University of Lucknow, 2002

Gunaseelan, Simi, Instructional Associate Professor
College of Pharmacy
PHD, North-Eastern Hill University, 2002

Guneralp, Burak, Assistant Professor
Geography
PHD, University of Illinois at Urbana-Champaign, 2006

Guneralp, Inci, Associate Professor
Geography
PHD, University of Illinois at Urbana-Champaign, 2007

Guo, Bing, Assistant Professor
Materials Science & Engr
PHD, Tsinghua University, China, 1998

Guo, Bing, Assistant Professor
Texas A&M University at Qatar
PHD, Tsinghua University, China, 1998

Guo, Hao, Visiting Assistant Professor
Mathematics
PHD, The University of Adelaide, 2018

Guo, Huiyi, Assistant Professor
Economics
PHD, University of Iowa, 2018

Guo, Shaodong, Associate Professor
Nutrition & Food Science
PHD, Peking University, Beijing China, 1995

Gupta, Sudhiranjan, Assistant Professor
College of Medicine
PHD, Bose Institute, 1997

Gursky, Sharon, Professor
Anthropology
PHD, State University of New York at Stony Brook, 1997

Gustafson, Robert A, Associate Professor
Mathematics
PHD, Yale University, 1979

Guthrie, Shannon, Adjunct Professor
School of Law
JD, Indiana University - Robert H. McKinney School of Law, 1993

Gutierrez-Osuna, Ricardo, Professor
Computer Science & Engineering
PHD, North Carolina State University, 1998

Guzelian, Christopher, Adjunct Professor
School of Law
JD, Stanford University, 2003

Haberl, Jeff, Professor
Architecture
PHD, University of Colorado, 1986

Haefeli, Evan P, Associate Professor
History
PHD, Princeton University, 2000

Haglund, John S, Associate Professor of Instruction
Mechanical Engineering
PHD, Texas A&M University, 2003

Hague, Steven S, Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2000

Hailey, Camille E, Senior Lecturer
Management
JD, South Texas College of Law, 1993

Hajash, Donna J, Instructional Associate Professor
Visualization
PHD, Siena Heights College, 1981

Hajimirza, Shima, Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2013

Hala, David, Assistant Professor
Marine Biology
PHD, Brunel University, 2007

Hale, Cassie D, Clinical Assistant Professor
Pediatric Dentistry
DDS, University of Colorado, 2016

Hale, Trevor Schuyler, Clinical Professor
Information & Operations Mgmt
DEN, Texas A&M University, 1997

Haliburton, James T, Lecturer
Architecture
PHD, Texas A&M University, 2016
MAR, Texas A&M University, 2014

Halket, Jonathan Robert Levin, Assistant Professor
Finance
PHD, New York University, 2009

Hall Jr, Charles R, Professor
Horticultural Sciences
PHD, Mississippi State University, 1988

Hall, Jessica R, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2009

Hall, Malikah A, Instructional Assistant Professor
School of Law
JD, North Carolina Central University School of Law, 2015

Hall, Michael B, Professor
Chemistry
PHD, University of Wisconsin - Madison, 1971

Hallermann, Detlef, Clinical Professor
Finance
PHD, Colorado School of Mines, 1999

Ham, Youngjib, Assistant Professor
Construction Science
PHD, University of Illinois at Urbana-Champaign, 2015
MAR, Seoul National University, Korea, 2011

Hambleton, James E, Adjunct Professor
School of Law
JD, George Washington University, 1978

Hamer, Gabriel L, Associate Professor
Entomology
PHD, Michigan State University, 2008

Hamer, Sarah A, Associate Professor
Vet Integrative Biosciences
DVM, Michigan State University, 2011
PHD, Michigan State University, 2010

Hamie, Christine S, Instructional Assistant Professor
International Affairs
PHD, University of York, 2007

Hamilton, Daniel Kirk, Professor
Architecture
PHD, Arizona State University, 2017

Hamilton, Donny L, Professor
Anthropology
PHD, University of Texas, 1975

Hamilton, Peter S, Associate Professor of the Practice
College of Engineering
DEN, The University of Texas at Austin, 1984

Hamilton, Wayne T, Senior Lecturer
Ecosystem Science & Mgmt
MS, Sul Ross State University, 1976

Hammady Brho, Mazen, Assistant Professor
Maritime Business Administration
PHD, University of North Texas, 2018

Hammer, Janet E, Clinical Professor
Teaching, Learning & Culture
PHD, University of Texas, 2003

Hammond, Tracy A, Professor
Computer Science & Engineering
PHD, Massachusetts Inst of Technology, 2007

Hamouda, Ayman K, Assistant Professor
College of Pharmacy
PHD, Texas Tech University Health Science Center, 2007

Han, Arum, Professor
Biomedical Engineering
PHD, Georgia Institute of Technology, 2005

Han, Arum, Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 2005

Han, Daikwon, Associate Professor
Epidemiology & Biostatistics
PHD, University of Buffalo, 2003

Han, Gang, Associate Professor
Epidemiology & Biostatistics
PHD, The Ohio State University, 2008

Han, Guichun, Clinical Assistant Professor
Vet Physiology & Pharmacology
PHD, Dalian Medical University, China, 2002

Han, Je C, University Distinguished Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1977

Hand, Michael R, Professor
Philosophy & Humanities
PHD, Florida State University, 1985

Hanik, Bruce W, Instructional Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2011

Hanin, Boris L, Assistant Professor
Mathematics
PHD, Northwestern University, 2014

Hankins, Rebecca L, Associate Professor
TAMU Libraries
MLS, Louisiana State University, 2000

Hannaford, Dinah R, Assistant Professor
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PHD, Iowa State University, 1973

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Holtzapfel, Mark T, Professor
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PHD, University of Pennsylvania, 1981

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PHD, Texas A&M University, 2001

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Horrillo, Juan J, Associate Professor
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Visualization
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Howard, Michael D, Associate Professor
Management
PHD, University of Washington, 2012

Howard, Peter B, Professor
Mathematics
PHD, Indiana University, 1998

Howe, Julie A, Associate Professor
Soil & Crop Sciences
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Howell, Jessica M, Associate Professor
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Hu, Jiang, Professor
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PHD, Mines Paris Tech, 1988

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Hudson, Angela P, Professor
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PHD, Texas A&M University, 1997

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Public Health Sciences
DDS, Baylor College of Dentistry, 1989
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Jones, David Edward, Assistant Professor
Statistics
PHD, Harvard, 2016

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Statistics
PHD, Virginia Tech, 1976

Jones, Glenn A, Professor
Marine Science
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Jones, Harry L, Senior Professor
Civil & Environmental Engineering
PHD, University of Illinois, 1969

Jones-Mckyer, Ellisa L, Professor
Hlth Promotion & Comm Hlth Sci
PHD, Indiana University, 2005

Jones-Schubart, Kara, Clinical Assistant Professor
College of Nursing
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Joseph, Merlyn L, Clinical Assistant Professor
College of Pharmacy
PHARM D, Texas Tech University Health Science Center, 2012

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Teaching, Learning & Culture
PHD, University of South Carolina, 1976

Jourdan, Dawn E, Professor
Land Arch & Urban Planning
PHD, Florida State University, 2004
JD, University of Kansas, 2000

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Orthodontics
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Jun, Mikyoung, Professor
Statistics
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Jung, Jae Hoon, Research Assistant Professor
Biology
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Jung, Jiyoung, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 2015

Jung, Junehyuk, Assistant Professor
Mathematics
PHD, Princeton University, 2013

Junkins, John L, University Distinguished Professor
Aerospace Engineering
PHD, University of California, Los Angeles, 1969

Juntune, Joyce E, Instructional Professor
Educational Psychology
PHD, Texas A&M University, 1997

Juras, Rytis, Research Assistant Professor
Vet Integrative Biosciences
PHD, Lithuanian Veterinary Academy, 2005
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Jurgens, Laura, Assistant Professor
Marine Biology
PHD, University of California Davis, 2015

KIM, Jeonghee, Assistant Professor
Eng Tech & Ind Distribution
PHD, Georgia Institute of Technology, 2018

Kabani, Faizan A, Assistant Professor
Dental Hygiene
PHD, University of North Texas Health Science Center, 2017

Kabir, Mian M, Lecturer
Geology & Geophysics
PHD, Delft University Of Technology, 1997

Kaihatu, James M, Professor
Civil & Environmental Engineering
PHD, University of Delaware, 1994

Kainthla, Priyanka, Adjunct Assistant Professor
Pediatric Dentistry
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Kaiser, Karl, Associate Professor
Marine Science
PHD, University of South Carolina, 2009

Kaiser, Ronald A, Professor
Recreation, Park & Tourism Sc
LLM, University of California, Berkeley, 1989
JD, Thomas M. Cooley Law School, 1977

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PHD, Aristotle University, 2009

Kalafatis, Stavros, Professor of the Practice
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MS, University of Arizona, 1991

Kalbasi, Shaída, Instructional Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2015

Kallendorf, Craig W, Professor
English
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Kallendorf, Hilaire A, Professor
Hispanic Studies
PHD, Princeton University, 2000

Kameoka, Jun, Professor
Electrical & Computer Eng
PHD, Cornell University, 2002

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Materials Science & Engr
PHD, Cornell University, 2002

Kamon, Teruki, Professor
Physics & Astronomy
PHD, University of Tsukuba, 1986

Kamphoefner, Walter D, Professor
History
PHD, University of Missouri, 1978

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Marketing
PHD, University of Colorado-Boulder, 2015

Kane, Matthew H, Instructional Associate Professor
Marine Engineering Technology
PHD, Georgia Institute of Technology, 2007

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Materials Science & Engr
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Foundational Sciences
PHD, University of Texas, 1999

Kang, Heonyong, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2014

Kang, Ho-Yeong, Associate Professor
Construction Science
PHD, Texas A&M University, 2001

Kao, Katy C, Associate Professor
Chemical Engineering
PHD, University of California, Los Angeles, 2005

Kapler, Geoffrey, Professor
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PHD, Harvard University, 1989

Kapoor, Rishika, Adjunct Assistant Professor
Periodontics
DDS, Texas A&M University, 2014

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International Studies
PHD, Universiteit Leiden, 2006

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Karim, Muhammad N, Professor
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PHD, University of Manchester, 1977

Karkoub, Mansour, Professor
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Karmakar, Moumita, Instructional Assistant Professor
Statistics
PHD, University of Maryland at Baltimore, 2015
PHD, University of Maryland Baltimore County, 2015

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Karpac, Jason S, Assistant Professor
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PHD, Yale University, 1998

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Electrical & Computer Eng
PHD, Portland State University, 2000

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Accounting
PHD, The University of Texas at Austin, 2019

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Kaspar-Coker, Lori J, Adjunct Professor
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Kates-Hammond, Cindy, Lecturer
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EDD, University of South Dakota, 2000

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Kattari, Kimberly A, Assistant Professor
Performance Studies
PHD, University of Texas at Austin, 2011
MMU, University of Texas at Austin, 2005

Katz, Claire E, Professor
Philosophy & Humanities
PHD, University of Memphis, 1999

Katzfuss, Matthias S, Associate Professor
Statistics
PHD, The Ohio State University, 2011

Katzgraber, Helmut G, Professor
Physics & Astronomy
PHD, University of California-Santa Cruz, 2001

Kaunas, Roland R, Associate Professor
Biomedical Engineering
PHD, University of California, San Diego, 2003

Kaya, Ruchan, Visiting Assistant Professor
Political Science
PHD, University of Florida, Gainesville, 2014

Keating, Peter B, Associate Professor
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Kebulis, Matthew F, Associate Professor
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Keffler, Robert, Adjunct Professor
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Keiper, Paul, Clinical Associate Professor
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Keller, Brandis K, Lecturer
Biomedical Engineering
PHD, Politecnico di Milano, 2013

Kelley, Dale, Veterinary Resident
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Kellstedt, Paul M, Professor
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PHD, University of Minnesota, Twin Cities, 1996

Kelly, Larry J, Clinical Professor
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Kendall, Shari E, Associate Professor
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Kenerley, Charles M, Professor
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PHD, North Carolina State University, 1983

Kenimer, Ann L, Professor
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Kennedy, Deanna M, Assistant Professor
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Kerins, Carolyn A, Associate Professor
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PHD, New York University, 2001

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Mathematics
PHD, University of Toronto, 2001

Kerr, Deborah L, Professor of the Practice
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PHD, The University of Texas at Austin, 1982

Kerth, Christopher R, Associate Professor
Animal Science
PHD, Texas Tech University, 1999

Kerwin, Sharon C, Professor
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Kesterke, Matthew J, Instructional Assistant Professor
Biomedical Sciences
PHD, University of Pittsburgh, 2016

Ketzenberg, Michael E, Associate Professor
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PHD, University of North Carolina at Chapel Hill, 2000

Keyser, John C, Professor
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PHD, University of North Carolina at Chapel Hill, 2000

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Marine Engineering Technology
PHD, Carnegie Mellon University, 2018

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PHD, St. John's University, 1992

Khatri, Sunil P, Professor
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PHD, University of California, Berkeley, 1999

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Chemical Engineering
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PHD, North Carolina State University, 2007

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Agricultural Economics
PHD, Texas A & M University, 2011

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Killough, John E, Professor
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Killough, Joy Kathleen, Lecturer
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PHD, Texas A&M University, 2018

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Kim, Eun J, Associate Professor
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PHD, Pennsylvania State University, 2003

Kim, Haejune, Assistant Professor of Instruction
Mechanical Engineering
PHD, University of Wisconsin - Milwaukee, 2014

Kim, Hoi-Eun, Associate Professor
History
PHD, Harvard University, 2006

Kim, Hwagyun, Associate Professor
Finance
PHD, University of Chicago, 2003

Kim, Hyounsub, Visiting Lecturer
Architecture
PHD, Texas A&M University, 2017
MAR, University of Pennsylvania, 2012

Kim, Jihoon, Assistant Professor
Petroleum Engineering
PHD, Stanford University, 2010

Kim, Joung Dong, Instructional Assistant Professor
Mathematics
PHD, State University of New York at Stony Brook, 2012

Kim, Moohyun, Professor
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PHD, Massachusetts Institute of Technology, 1988

Kim, Sun J, Research Assistant Professor
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PHD, Sogang University, 2006

Kim, Won-Jong, Associate Professor
Mechanical Engineering
PHD, Massachusetts Inst of Technology, 1997

Kim, Yang M, Lecturer
Land Arch & Urban Planning
MLA, Texas A&M University, 2010

Kim, Yong-Joe, Associate Professor
Mechanical Engineering
PHD, Purdue University, 2003

Kimber, Mark, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, Purdue University, 2008

Kimber, Mark L, Assistant Professor
Nuclear Engineering
PHD, Purdue University, 2008

Kindrick, Roy D, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1967

King, Andrew R, Lecturer
Horticultural Sciences
PHD, Texas A&M University, 2015

King, Maria D, Assistant Professor
Biological & Agricultural Eng
PHD, Institute for Biotechnology, Berlin, Germany, 1986

King, Michael J, Professor
Petroleum Engineering
PHD, Syracuse University, 1980

King, Scottow A, Adjunct Professor
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JD, New York University Law School, 1982

King, Silvia R, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Catholic University of Minas Gerais-Brazil, 1981

King-Metters, Kathryn H, Executive Professor
Management
PHD, Capella University, 2007

Kingman, Douglas M, Instructional Associate Professor
Biological & Agricultural Eng
PHD, Purdue University, 2002

Kinra, Vikram K, Professor
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PHD, Brown University, 1975

Kirkendall, Andrew J, Professor
History
PHD, University of North Carolina at Chapel Hill, 1996

Kirkland, Karen V, Professor
Nuclear Engineering
PHD, The University of Tokyo, 1999

Kiser, James S, Adjunct Professor
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JD, Texas Wesleyan University School of Law, 2009

Kish, Laszlo B, Professor
Electrical & Computer Eng
PHD, Uppsala University, Sweden, 1994

Kitajima, Hiroko, Assistant Professor
Geology & Geophysics
PHD, Texas A&M University, 2010

Kitchens, Joel D, Associate Professor
TAMU Libraries
PHD, Texas A&M University, 2016

Kitcher, Evans D, Lecturer
College of Engineering
PHD, Texas A&M University, 2016

Klappenecker, Andreas, Professor
Computer Science & Engineering
PHD, Universitat Karlsruhe, 1998

Klein Douglas, Professor
Foundational Sciences
PHD, University of Texas, 1969

Klein, Andrew G, Professor
Geography
PHD, Cornell University, 1997

Klein, Nancy L, Associate Professor
Architecture
PHD, Bryn Mawr College, 1991

Klein, Patricia E, Professor
Horticultural Sciences
PHD, Texas A&M University, 1989

Kleinfeld, Denis, Adjunct Professor
School of Law
JD, Loyola University, 1970

Klemm, William R, Senior Professor
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PHD, University of Notre Dame, 1963
DVM, Auburn University, 1958

Knap, Anthony H, Professor
Oceanography
PHD, University of South Hampton, 1978

Knappett, Peter S, Assistant Professor
Geology & Geophysics
PHD, University of Tennessee at Knoxville, 2010

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DVM, Texas A&M University, 2013
PHD, Texas A&M University, 2009

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Vet Large Animal Clinical Sc
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Ecosystem Science & Mgmt
PHD, Texas A&M University, 1980

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Maritime Business Administration
PHD, University of Texas HSC at Houston, 1992

Ko, Che-Ming, Distinguished Professor
Physics & Astronomy
PHD, State University of New York at Stony Brook, 1973

Ko, Gladys Y, Associate Professor
Vet Integrative Biosciences
PHD, Kent State University, 1996

Ko, Michael L, Research Assistant Professor
Vet Integrative Biosciences
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Ko, Ya Ping, Research Assistant Professor
Institute of Biosciences & Tec
PHD, University of Cologne, 2005

Kobayashi, Koichi, Research Professor
College of Medicine
PHD, Chiba University School of Medicine, 1998

Koch, Michael T, Associate Professor
Political Science
PHD, University of California, Davis, 2002

Kocharovskaya, Olga A, University Distinguished Professor
Physics & Astronomy
PHD, Institute of Applied Physics, Russian Academy of Sciences, 1986

Kocharovsky, Vitaly V, Professor
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PHD, Institute of Applied Physics, Russian Academy of Sciences, 1986

Koehler, Michael J, Adjunct Professor
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JD, University of Wisconsin Law School, 2000

Kofford, Kelly R, Clinical Associate Professor
Diagnostic Sciences
DDS, Creighton University, 1978

Kogut, Mark H, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Baylor College of Dentistry, 1977

Koh, Poh Wee, Assistant Professor
Teaching, Learning & Culture
PHD, University of Toronto, 2016

Koiwa, Hisashi, Professor
Horticultural Sciences
PHD, Kyoto University, 1996

Kolari, James, Professor
Finance
PHD, Arizona State University, 1980

Kolasinski, Adam C, Associate Professor
Finance
PHD, MIT, 2006

Koliou, Maria, Assistant Professor
Civil & Environmental Engineering
PHD, University of Buffalo - The State University of New York, 2014

Kolodziej, Elizabeth Y, Instructional Assistant Professor
Statistics
PHD, Texas A&M University, 2010

Kolomiets, Mikhailo V, Professor
Plant Pathology & Microbiology
PHD, Iowa State University, 1998

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International Studies
PHD, University of North Carolina at Chapel Hill, 1985

Kontogiorgos, Dimitrios I, Clinical Professor
Comprehensive Dentistry
PHD, Texas A&M University System Health Sciences Center, 2010
DMD, National and Capodistrian University of Athens, 2003

Koola, Paul M, Professor of the Practice
Ocean Engineering
PHD, Indian Institute of Technology, Madras, 1991

Koopman, Joel E, Assistant Professor
Management
PHD, Michigan State University, 2014

Koppa, Rodger J, Senior Associate Professor
Industrial & Systems Eng
PHD, Texas A&M University, 1979

Kornegay, Joe N, Professor
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PHD, University of Georgia, 1982

Korosec, Jason A, Adjunct Professor
School of Law
JD, Case Western Reserve University School of Law, 1997

Korty, Robert L, Associate Professor
Atmospheric Sciences
PHD, Massachusetts Institute of Technology, 2005

Kothmann, Merwyn M, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1968

Koufteros, Xenophon, Professor
Information & Operations Mgmt
PHD, University of Toledo, 1995

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Kraemer, Duane C, Senior Professor
Vet Physiology & Pharmacology
DVM, Agricultural & Mechanical College, 1966
PHD, Agricultural & Mechanical College, 1966

Krajicek, John C, Executive Professor
College of Business
MA, University of North Texas, 1993

Kramer, Phillip R, Professor
Biomedical Sciences
PHD, Texas A&M University, 1996

Krasnow, Maya S, Veterinary Resident
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DVM, The Ohio State University, 2016

Krasteva, Silvana S, Associate Professor
Economics
PHD, Duke University, 2009

Kravaris, Costas, Professor
Chemical Engineering
PHD, California Institute of Technology, 1984

Krecek, Rosina C, Visiting Professor
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PHD, University of Pretoria, 1985

Kreider, Richard, Professor
Health & Kinesiology
PHD, University of Southern Mississippi, 1987

Krenek, Nancy, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DOC, The University of Texas Medical Branch, 2014

Kress, Lisa M, Lecturer
Liberal Studies
MFA, University of Houston, 2001

Kreuter, Urs P, Professor
Ecosystem Science & Mgmt
PHD, Utah State University, 1992

Krisciunas, Kevin L, Instructional Assistant Professor
Physics & Astronomy
PHD, University of Washington, 2000

Krolikowski, Wieslaw Z, Professor
Texas A&M University at Qatar
PHD, Institute of Physics, Polish Academy of Sciences, 1988

Kronenberg, Andreas K, Professor
Geology & Geophysics
PHD, Brown University, 1983

Krotoszynski Jr, Ronald J, Adjunct Professor
School of Law
JD, Duke University, 1991

Ku, Charlotte, Professor
School of Law
PHD, Fletcher School of Law & Diplomacy, 1984

Kuan, Jeffrey, Assistant Professor
Mathematics
PHD, Harvard University, 2015

Kubena, Karen S, Professor
Nutrition & Food Science
PHD, Texas A&M University, 1982

Kuchment, Peter, University Distinguished Professor
Mathematics
PHD, Kharkov State University, Russia, 1973

Kulatilaka, Waruna D, Associate Professor
Aerospace Engineering
DEN, Purdue University, 2006

Kulatilaka, Waruna D, Associate Professor
Mechanical Engineering
DEN, Purdue University, 2006

Kum, Hye Chung, Associate Professor
Computer Science & Engineering
PHD, University of North Carolina - Chapel Hill, 2004

Kum, Hye Chung, Associate Professor
Industrial & Systems Eng
PHD, University of North Carolina - Chapel Hill, 2004

Kum, Hye Chung, Associate Professor
Health Policy & Management
PHD, University of North Carolina - Chapel Hill, 2004

Kumar, Narendra, Associate Professor
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PHD, Indian Institute of Technology, Kharagpur, 2001

Kumar, Panganamala R, Distinguished Professor
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PHD, Washington University in St. Louis, 1977

Kumar, Panganamala R, Professor
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Kunkel, Gary R, Associate Professor
Biochemistry & Biophysics
PHD, University of California - Los Angeles, 1977

Kuo, Chun Hsin, TEES Associate Research Scientist
Materials Science & Engr
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Kuo, Li-Jen, Associate Professor
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PHD, University of Illinois at Urbana - Champaign, 2006

Kuo, Lih, Professor
College of Medicine
PHD, Virginia Commonwealth University, 1987

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Chemical Engineering
PHD, Columbia University, 1980

Kuo, Yue, Associate Professor
Materials Science & Engr
PHD, Columbia University, 1980

Kurouski, Dzmitry L, Assistant Professor
Biochemistry & Biophysics
PHD, Suny at Albany, 2013

Kurwitz, Richard C, Senior Lecturer
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PHD, Texas A&M University, 2009

Kuttolamadom, Mathew A, Associate Professor
Eng Tech & Ind Distribution
PHD, Clemson University, 2012

Kuttolamadom, Mathew A, Assistant Professor
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PHD, Clemson University, 2012

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PHD, University of Michigan, 2016

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PHD, University of Michigan, 2016

Kwok, Oi-Man, Professor
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PHD, Arizona State University, 2005

Kwon, Joseph, Assistant Professor
Chemical Engineering
PHD, University of California, Los Angeles, 2015

Kyle, Gerard T, Professor
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Communication
PHD, The University of Texas - Austin, 1999

Laane, Jaan, Professor
Chemistry
PHD, Massachusetts Institute of Technology, 1967

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Visualization
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Labonte, Jessica, Assistant Professor
Marine Biology
PHD, University of British Columbia, 2013

Lacey, Ronald E, Professor
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Lacher Jr, Thomas E, Professor
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PHD, University of Pittsburgh, 1980

Lacy, Ernestine S, Professor
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DDS, Baylor College of Dentistry, 1994

Lacy, Thomas E., Professor
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PHD, Georgia Institute of Technology, 1998

Lafayette, Carol J, Professor
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Lafon, Charles W, Professor
Geography
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Laganowsky, Arthur D, Assistant Professor
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Lahey, Joanna N, Associate Professor
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Lake, Justin, Associate Professor
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PHD, Harvard University, 2008

Lakkimsetti, Chaitanya, Assistant Professor
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Lamb, Graham C, Professor
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Lamb, William M, Professor
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Lamphere, Jenna A, Assistant Professor
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Landsberg, Joseph M, Professor
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Lassila, Dennis R, Professor
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Laub, James D, Clinical Assistant Professor
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Law, Wendy N, Associate Professor
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JD, Texas Wesleyan University School of Law, 2003

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Lawler, John, Professor
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PHD, University of Florida, 1991

Lawley, Mark A, Professor
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Lawrence, Frederick B, Professor
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Laya Pereira, Juan Carlos, Assistant Professor
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Layne, Christopher, Distinguished Professor
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Layton, Astrid C, Assistant Professor
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Layton, James S, Clinical Assistant Professor
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Educ Admn & Human Resource Dev
PHD, University of Southern California, 2005

Lee, ChaBum, Assistant Professor
Mechanical Engineering
PHD, Gwangju Institute of Science and Technology, 2012

Lee, Chanam, Professor
Land Arch & Urban Planning
PHD, University of Washington, 2004

Lee, Chia Ming, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, National University of Singapore, 1991

Lee, David M, Distinguished Professor
Physics & Astronomy
PHD, Yale University, 1959

Lee, Dong-Joon, Assistant Professor
TAMU Libraries
PHD, Florida State University, 2015

Lee, Hyun Woo, Assistant Professor
Health & Kinesiology
PHD, Florida State University, 2014

Lee, Hyunyoung, Senior Lecturer
Computer Science & Engineering
PHD, Texas A&M University, 2001

Lee, Ryang H, Assistant Professor
College of Medicine
PHD, Pusan National University, South Korea, 2003

Lee, Ryun Jung, Lecturer
Land Arch & Urban Planning
PHD, Texas A&M University, 2018

Lee, Sang Rae, Senior Lecturer
Mathematics
PHD, University of Oklahoma, 2012

Lee, William J, Professor
Petroleum Engineering
PHD, Georgia Institute of Technology, 1963

Lei, Jun, Assistant Professor
International Studies
PHD, University of California, San Diego, 2015

Leibowitz, Julian L, Professor
College of Medicine
MD, Albert Einstein College of Medicine, 1975
PHD, Albert Einstein College of Medicine, 1974

Leiderman, Daniil M, Instructional Assistant Professor
Visualization
PHD, PRINCETON UNIVERSITY, 2016

Lele, Pushkar P, Assistant Professor
Chemical Engineering
PHD, University of Delaware, Newark, 2010

Lemke, Michael K, Clinical Assistant Professor
Health & Kinesiology
PHD, Wichita State University, 2013

Lench, Heather C, Professor
Psychological & Brain Sciences
PHD, University of California Irvine, 2007

Lenihan, John H, Associate Professor
History
PHD, University of Maryland, 1976

Lenz, Eric D, Lecturer
Economics
PHD, Southern Illinois University Carbondale, 2015

Leon, Victor J, Professor
Eng Tech & Ind Distribution
PHD, Lehigh University, 1991

Leon, Victor J, Professor
Industrial & Systems Eng
PHD, Lehigh University, 1991

Lester, Richard H, Clinical Professor
Management
PHD, Texas A&M University, 2003

Letko Olbelina, Instructional Assistant Professor
Foundational Sciences
PHD, University of Illinois at Urbana-Champaign, 2015

Leunes, Arnold D, Senior Professor
Psychological & Brain Sciences
PHD, North Texas State College, 1969

Levine, Gwendolyn J, Clinical Associate Professor
Veterinary Pathobiology
DVM, Texas A&M University, 2006

Levine, Jonathan M, Professor
Vet Small Animal Clinical Sc
DVM, Cornell University, 2001

Lewis Jr, Donald H, Executive Professor
Management
MBA, Texas A&M International University, 1992

Lewis, Dominique H, Lecturer
Political Science
PHD, Michigan State University, 2017

Lewis, Jennifer L, Senior Lecturer
Mathematics
PHD, Ohio State University, 1980

Lewis, Michael P, Associate Professor
Construction Science
PHD, North Carolina State University, 2009

Leyk, Teresa S, Senior Lecturer
Computer Science & Engineering
PHD, Australian National University, 1998

Li, Dongying, Assistant Professor
Land Arch & Urban Planning
PHD, University of Illinois - Champaign, 2016

Li, Jianrong, Professor
Vet Integrative Biosciences
PHD, University of Hawaii at Manoa, 1997

Li, Peng, Professor
Electrical & Computer Eng
PHD, Carnegie Mellon University, 2003

Li, Pingwei, Professor
Biochemistry & Biophysics
PHD, Peking University, 1996

Li, Qi, Professor
Economics
PHD, Texas A&M University, 1991

Li, Qinglei, Associate Professor
Vet Integrative Biosciences
PHD, Harbin Medical University, 2001

Li, Quan, Professor
Political Science
PHD, Florida State University, 1998

Li, Wei, Associate Professor
Land Arch & Urban Planning
PHD, University of California, Irvine, 2011

Li, Yeping, Professor
Teaching, Learning & Culture
PHD, University of Pittsburgh, 1999

Li, Ying, Clinical Associate Professor
Information & Operations Mgmt
PHD, University of Michigan, 2005

Li, Ying, Associate Professor
Mechanical Engineering
PHD, University of Florida, 2007

Liang, Hong, Professor
Mechanical Engineering
PHD, Stevens Institute of Technology, 1992

Liang, Hong, Professor
Materials Science & Engr
PHD, Stevens Institute of Technology, 1992

Liang, Hui, Professor
Diagnostic Sciences
PHD, Beijing Medical University, 1992
DDS, Beijing Medical University, 1988

Liang, Hwa Chi, Instructional Assistant Professor
Statistics
PHD, University of New Mexico, 2003

Liang, Jenn T, Professor
Petroleum Engineering
PHD, The University of Texas at Austin, 1988

Liberzon, Israel, Professor
College of Medicine
MD, Sackler Medical School, Tel Aviv University, Tel Aviv, Israel, 1987

Lichorad, Anna, Clinical Assistant Professor
College of Medicine
MD, The University of Texas Health Science Center at Houston, 1994

Lidbury, Jonathan A, Assistant Professor
Vet Small Animal Clinical Sc
BVetM, University of Glasgow, 2002

Liescheski, Joshua S, Clinical Assistant Professor
Public Health Sciences
DDS, The University of Texas Health Science Center at San Antonio, 2010

Lieuwen, Peter E, Professor
Performance Studies
PHD, University of California at Santa Barbara, 1984

Liew, Jeffrey C, Professor
Educational Psychology
PHD, Arizona State University, 2005

Light, Jessica E, Associate Professor
Wildlife & Fisheries Sciences
PHD, Louisiana State University, 2005

Lightfoot, John, Professor
Health & Kinesiology
PHD, University of Tennessee, 1986

Lillard, Michael J, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1979

Lim, Phaik S, Senior Lecturer
Political Science
PHD, University of Houston, 2003

Lim, Soon Mi, Instructional Assistant Professor
Chemistry
PHD, Texas A&M University, 2006

Lima Filho, Paulo C, Professor
Mathematics
PHD, State University of New York at Stony Brook, 1989

Limbach, Christopher M, Assistant Professor
Aerospace Engineering
PHD, Princeton University, 2015

Lin, Ko-Yu W, Clinical Assistant Professor
Pediatric Dentistry
DDS, Kaohsiung Medical College, Taiwan, 1985

Lin, Paotai, Assistant Professor
Electrical & Computer Eng
PHD, Northwestern University, 2009

Lin, Paotai, Assistant Professor
Materials Science & Engr
PHD, Northwestern University, 2009

Lin, Szu-Hsuan, Instructional Assistant Professor
Health Policy & Management
PHD, Texas A&M Health Science Center, School of Public Health, 2015

Lincoln, Yvonna S, Distinguished Professor
Educ Admn & Human Resource Dev
PHD, Indiana University, 1977

Lindahl, Paul A, Professor
Chemistry
PHD, Massachusetts Institute of Technology, 1985

Linderholm, Anna E, Assistant Professor
Anthropology
PHD, Stockholm University - Sweden, 2008

Lindo, Jason M, Professor
Economics
PHD, University of California - Davis, 2009

Lineberger, R D, Professor
Horticultural Sciences
PHD, Cornell University, 1978

Linke, Patrick, Professor
Texas A&M University at Qatar
PHD, University of Manchester Institute of Science and Technology, 2001

Linn, Brian M, Professor
History
PHD, Ohio State University, 1985

Linneman, Judith A, Instructional Associate Professor
Sociology
PHD, Iowa State University, 1985

Lipsmeyer, Christine S, Associate Professor
Political Science
PHD, Vanderbilt University, 1999

Lisonbee, Laurie J, Lecturer
Visualization
MFA, California State University, Fullerton, 1998

Little, Adam L, Assistant Professor of the Practice
Vet Small Animal Clinical Sc
DVM, University of Guelph, 2013

Little, Charles D, Lecturer
George Bush School of Govern
PHD, University of North Texas, 1985

Little, Dallas N, Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1979

Litzenberg, Kerry K, Sr. Professor
Agricultural Economics
PHD, Purdue University, 1979

Liu, Chun-Hung, Assistant Professor
Mathematics
PHD, Georgia Institute of Technology, 2014

Liu, Fei, Associate Professor
College of Medicine
PHD, Fourth Military Medical University, China, 2002

Liu, Hui, Associate Professor
Marine Biology
PHD, University of Alaska Fairbanks, 2006

Liu, Jiling, Instructional Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2016

Liu, Jyh C, Professor
Computer Science & Engineering
PHD, University of Michigan - Ann Arbor, 1989

Liu, Leyuan, Assistant Professor
Institute of Biosciences & Tec
PHD, Texas A&M University, 1997

Liu, Mingyao, Senior Professor
Institute of Biosciences & Tec
PHD, University of Maryland, 1992

Liu, Tie, Professor
Electrical & Computer Eng
PHD, University of Illinois, 2006

Liu, Wenshe, Professor
Chemistry
PHD, University of California, Davis, 2005

Liu, Xiaoding, Assistant Professor
Finance
PHD, University of Florida, 2012

Liu, Xiaohua, Associate Professor
Biomedical Sciences
PHD, Tsinghua University, China, 2002

Liu, Yan, Assistant Professor
Finance
PHD, Duke University, 2014

Liu, Yan, Associate Professor
Marketing
PHD, Purdue University, 2010

Livingston, Jerry L, Clinical Assistant Professor
College of Medicine
PHD, Capella University, 2013

Locke, Unity B, Assistant Professor
Veterinary Pathobiology
DVM, University of Cambridge, 2008

Lockett, Landry L, Assistant Lecturer
Ag Leadership, Educ & Comm
EDD, Texas A&M University, 2007

Lockless, Steve W, Associate Professor
Biology
PHD, University of Texas at Dallas, 2002

Logan, Linda L, Professor
Veterinary Pathobiology
PHD, University of California-Davis, 1987
DVM, Texas A&M University, 1976

Logan, Shaun M, Instructional Assistant Professor
Biomedical Sciences
PHD, University of North Texas Health Science Center, 2009

Logan, Timothy S, Assistant Professor
Atmospheric Sciences
PHD, University of North Dakota, 2014

Loguinov, Dmitri, Professor
Computer Science & Engineering
PHD, City University of New York, 2002

Lohmann, Layla C, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, University of Oklahoma, 2011

Loisel, Julie, Assistant Professor
Geography
PHD, Lehigh University, 2012

Lombardini, Leonardo, Professor
Horticultural Sciences
PHD, Michigan State University, 1999

London, Mara R, Instructional Associate Professor
Civil & Environmental Engineering
PHD, University of Texas at Austin, 2009

Long, Charles R, Professor
Vet Physiology & Pharmacology
PHD, University of Massachusetts - Amherst, 1996

Longnecker, Michael T, Professor
Statistics
PHD, Florida State University, 1976

Loopstra, Carol A, Associate Professor
Ecosystem Science & Mgmt
PHD, North Carolina State University, 1992

Lopez, Joseph, Lecturer
Communication
PHD, The University of Texas at Austin, 2010

Lopez, Marcelo F., Assistant Professor
Architecture
MS, Columbia University, New York, 2013

Lord, Dominique, Professor
Civil & Environmental Engineering
PHD, University of Toronto, 2000

Lorente, Paula, Assistant Lecturer
Land Arch & Urban Planning
PHD, Texas A&M University, 2016

Loria Lepiz, Mauricio A, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Universidad Nacional de Costa Rica, 2000

Louchouart, Patrick, Professor
Marine Science
PHD, Universite du Quebec a Montreal, 1997

Loudder, Martha L, Professor
Accounting
PHD, Arizona State University, 1990

Love, Charles C, Professor
Vet Large Animal Clinical Sc
DVM, University of Missouri-Columbia, 1984

Lowery Jr, Lee L, Senior Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1967

Lu, Dai, Associate Professor
College of Pharmacy
PHD, University of Connecticut, 2005

Lu, Mi, Professor
Electrical & Computer Eng
PHD, Rice University, 1987

Lu, Yongbo, Associate Professor
Biomedical Sciences
PHD, University of Missouri-Kansas City, 2007

Lu, Zhipeng, Senior Lecturer
Architecture
PHD, Texas A&M University, 2009

Lucas, Gary M, Professor
School of Law
JD, Tulane University, 2004

Luce, Andrea M, Clinical Associate Professor
College of Pharmacy
DOC, University of Houston College of Pharmacy, 2007

Luco Echeverria, Fernando A, Assistant Professor
Economics
PHD, Northwestern University, 2014

Lueck, Jennifer A, Assistant Professor
Communication
PHD, University of Minnesota, 2016

Luiselli, Alessandra, Professor
Hispanic Studies
PHD, University of New Mexico, 1990

Luke, Jeffrey D, Clinical Assistant Professor
College of Pharmacy
PHARM D, Purdue University, 2014

Lum, Jason K, Lecturer
George Bush School of Govern
JD, University of California, Berkeley, 2000

Lunney, Joseph G, Professor
School of Law
PHD, TULANE UNIVERSITY, 2006
JD, Stanford University, 1990

Luo, Wen, Associate Professor
Educational Psychology
PHD, Texas A&M University, 2007

Lupiani, Blanca M, Professor
Veterinary Pathobiology
PHD, University of Maryland-College Park, 1994

Lusher, John D, Associate Professor Of The Practice
Electrical & Computer Eng
PHD, Texas A&M University, 2018

Lutkenhaus, Jodie, Associate Professor
Materials Science & Engr
PHD, University of Notre Dame, 2003

Lutkenhaus, Jodie L, Associate Professor
Chemical Engineering
PHD, University of Notre Dame, 2003

Lutz, Joann A, Professor
Liberal Studies
PHD, University of North Texas, 1993

Lutz, Shawn M, Visiting Assistant Professor
Architecture
MAR, Harvard University Graduate School of Design, 2011

Luxemburg Leon, Associate Professor
Foundational Sciences
PHD, Texas A&M University, 1987

Lyczak, Kristin C, Clinical Assistant Professor
Vet Integrative Biosciences
DVM, Colorado State University, 2003

Lyle, Stacey D, Instructional Assistant Professor
Geography
PHD, University of Georgia, 2003

Lynch, Benjamin R, Senior Lecturer
Mathematics
PHD, University of Tennessee, 2010

Lynch, Darrell W, Lecturer
Anthropology
PHD, University of Tennessee, 2014

Lynch, Patricia S, Adjunct Professor
Educational Psychology
PHD, Texas A&M University, 1992

Lynch, Rachel M, Research Assistant Professor
College of Medicine
PHD, University of Tennessee, 2010

Lynch, Richard G, Visiting Assistant Professor
Mathematics
PHD, University of Missouri, 2016

Lyons, Luke C, Lecturer
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2018

Lytton, Robert L, Professor
Civil & Environmental Engineering
PHD, University of Texas - Austin, 1967

Lyuksyutov, Igor F, Professor
Physics & Astronomy
PHD, Highest Attestation Commission at Ministry of Education and
Science of Russian Federation, 1990

MATICH, PHILIP, Instructional Assistant Professor
Marine Biology
PHD, Florida International University, 2014

Ma, Chao, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of California, 2015

Ma, Chao, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, University of California, 2015

Ma, Chao, Assistant Professor
Materials Science & Engr
PHD, University of California, 2015

Ma, Ping, Assistant Professor
Hlth Promotion & Comm Hlth Sci
PHD, Tulane University School of Public Health and Tropical Medicine,
2013

Ma, Xingmao, Associate Professor
Civil & Environmental Engineering
PHD, Missouri University of Science and Technology, 2004

Mabbott, Samuel, Assistant Professor
Biomedical Engineering
PHD, University of Manchester, Manchester Interdisciplinary Biocentre,
2012

MacNamara, Annmarie E, Assistant Professor
Psychological & Brain Sciences
PHD, Stony Brook University, 2013

MacNamara, Lawrence T, Assistant Professor
History
PHD, Columbia University, 2015

Mackenzie, Duncan S, Associate Professor
Biology
PHD, University of California, Berkeley, 1980

Mackin, Robert S, Instructional Associate Professor
Sociology
PHD, University of Wisconsin - madison, 1998

Macri, Lucas M, Professor
Physics & Astronomy
PHD, Harvard University, 2001

Maddock, Jason E, Professor
Environmental & Occpnl Hlth
PHD, University of Rhode Island, 1999

Madkins, Jeanette P, Lecturer
Psychological & Brain Sciences
PHD, Texas A&M University, 2007

Madrahimov, Sherzod T, Assistant Professor
Texas A&M University at Qatar
PHD, University of Illinois, 2012

Madrid, Nathan C, Lecturer
Visualization
MFA, Texas Woman's University, 2014

Madsen, Christi K, Professor
Electrical & Computer Eng
PHD, Rutgers State University of New Jersey, 1996

Madsen, Christi K, Professor
Materials Science & Engr
PHD, Rutgers State University of New Jersey, 1996

Madsen, Jean A,
Educ Admn & Human Resource Dev
PHD, The University of Kansas, 1986

Maffei, Gerald L, Visiting Professor
Architecture
MAR, University of California at Berkley, 1969

Maggard, Bryan, Senior Lecturer
Petroleum Engineering
PHD, Texas A&M University, 2000

Magill, Clint W, Professor
Plant Pathology & Microbiology
PHD, Cornell University, 1969

Magnuson, William J, Associate Professor
School of Law
JD, Harvard Law School, 2009

Mahajan, Arvind, Regents Professor
Finance
PHD, Georgia State University, 1980

Mahapatra, Rabinarayan, Professor
Computer Science & Engineering
PHD, Indian Institute of Technology, Kharagpur, 1992

Mahapatra, Rupak K, Professor
Physics & Astronomy
PHD, University of Minnesota, 2000

Mai, Bin, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Texas Dallas, 2006

Maier, Matthias Sebastian, Assistant Professor
Mathematics
PHD, Ruprecht-Karls Universitat Heidelberg, Germany, 2015

Maitland IV, Duncan J, Professor
Biomedical Engineering
PHD, Northwestern University, 1995

Maitland, Kristen D, Associate Professor
Biomedical Engineering
PHD, University of Texas, 2006

Majeti, Ravikumar N, Professor
College of Pharmacy
PHD, Indian Institute of Technology, Roorkee, 2000

Majji, Manoranjan, Assistant Professor
Aerospace Engineering
PHD, Texas A&M University, 2009

Malak Jr, Richard J, Associate Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2008

Malave, Ceasar, Professor
Industrial & Systems Eng
PHD, University of South Florida, 1987

Malave, Ceasar, Professor
Texas A&M University at Qatar
PHD, University of South Florida, 1987

Mallick, Bani K, University Distinguished Professor
Statistics
PHD, University of Connecticut, 1994

Mallin, Charles M, Adjunct Professor
School of Law
JD, Southwestern School of Law, 1973

Mallonee, Lisa F, Professor
Dental Hygiene
MPH, University of North Carolina at Chapel Hill, 2000

Malloy, Evan M, Adjunct Professor
School of Law
JD, Texas Tech University School of Law, 2006

Mandell, Laura C, Professor
English
PHD, Cornell University, 1992

Mander, John B, Professor
Civil & Environmental Engineering
PHD, University of Canterbury, 1984

Maness, Robert S, Associate Professor of the Practice
Economics
PHD, Texas A&M University, 1992

Manisseri Kalathil, Dileep, Assistant Professor
Electrical & Computer Eng
PHD, University of California at Berkeley, 2014

Mankin, Joseph M, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Tennessee-Knoxville, 2007

Mankin, Kelley M, Assistant Professor
Vet Small Animal Clinical Sc
DVM, University of Missouri-Columbia, 2006

Mann, Abby L, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University, 2011

Mann, George J, Professor
Architecture
DVM, Columbia University, 1961

Mannan, Mahboobul, Professor
Chemical Engineering
PHD, University of Oklahoma, 1986

Manson, Michael D, Professor
Biology
PHD, Stanford University, 1976

Mansoor, Bilal, Assistant Professor
Materials Science & Engr
PHD, University of Michigan, 2010

Mansoor, Bilal, Assistant Professor
Texas A&M University at Qatar
PHD, University of Michigan, 2010

Marcantonio, Franco, Professor
Geology & Geophysics
PHD, Columbia University, 1994

Marcantonio, Janet G, Executive Professor
College of Business
PHD, New York University, 1999

Marchbanks III, Miner P, Lecturer
Public Service & Administration
PHD, Texas A&M University, 2005

Marchesini, Manuela, Associate Professor
International Studies
PHD, Stanford University, 2000

Maren, Stephen A, Distinguished Professor
Psychological & Brain Sciences
PHD, University of Southern California, 1993

Marianno, Craig M, Assistant Professor
Nuclear Engineering
PHD, Oregon State University, 2000

Marin Thornton, Gabriela, Instructional Associate Professor
International Affairs
PHD, University of Miami, 2006

Marini, Francesca, Associate Professor
TAMU Libraries
DLS, University of California, Los Angeles, 2005

Mark, Christine L, Clinical Assistant Professor
Educ Admn & Human Resource Dev
PHD, The University of Southern Mississippi, 2014

Mark, Samuel E, Professor
Liberal Studies
PHD, Texas A&M University, 2000

Marklund, Leroy, Clinical Assistant Professor
College of Nursing
DNP, University of Alabama, 2015

Markovic, Milan, Professor
School of Law
JD, Georgetown University, 2006

Marlow, William H, Senior Professor
Nuclear Engineering
PHD, University of Texas, 1974
PHD, University of Texas, 1973

Marouf, Fatma E, Professor
School of Law
JD, Harvard Law School, 2002

Marr, Karina W, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2005

Marras, William S, Visiting Professor
College of Engineering
PHD, Wayne State University, 1982

Marshall, Christopher, Professor
Marine Biology
PHD, University of Florida, 1997

Marshall, Jennifer L, Assistant Professor
Physics & Astronomy
PHD, Ohio State University, 2006

Marshall, Robert, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 1995

Martin, Amy E, Professor
Civil & Environmental Engineering
PHD, University of California, Berkeley, 1997

Martin, June C, Instructional Associate Professor
Land Arch & Urban Planning
MS, University of Georgia, 2002
MPA, University of Georgia, 1991

Martin, Michael T, Senior Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1968

Martin, Steven E, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2008

Martindale, Lanny R, Senior Lecturer
Finance
JD, South Texas College of Law, 1995

Martinez De Andino, Elena V, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Pennsylvania School of Veterinary Medicine, 2016

Martinez III, Mardoqueo J, Clinical Assistant Professor
College of Pharmacy
PHARM D, Creighton University School of Pharmacy and Health Professions, 2015

Martinez, Rudy D, Instructional Assistant Professor
Marine Engineering Technology
PHD, University of South Carolina, 2004

Martz, Jill T, Executive Professor
Recreation, Park & Tourism Sc
PHD, University of Tennessee, 2004
PHD, University of Tennessee, Knoxville, 2004

Marvin, Edward, Adjunct Faculty
School of Law
JD, St. Mary's University School of Law, 2006

Masad, Eyad, Professor
Civil & Environmental Engineering
PHD, Washington State University, 1998

Masad, Eyad A, Professor
Texas A&M University at Qatar
PHD, Washington State University, 1998

Mash, Lana K, Clinical Associate Professor
Comprehensive Dentistry
DDS, University of Missouri - Kansas City, 1980

Mashuga, Chad V, Assistant Professor
Chemical Engineering
PHD, Michigan Technological University, 1999

Mason, John D, Instructional Assistant Professor
Physics & Astronomy
PHD, Texas A&M University, 2016

Masri, Mohamad R, Associate Professor
Mathematics
PHD, University of Texas at Austin, 2005

Masset, Michael P, Associate Professor
Health & Kinesiology
PHD, University of Illinois at Urbana-Champaign, 1997

Matarrita Cascante, David, Associate Professor
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 2008

Mateos, Mariana, Associate Professor
Wildlife & Fisheries Sciences
PHD, Rutgers, 2002

Mathieu, Olivier E, Research Associate Professor
Mechanical Engineering
PHD, University of Orleans, 2007

Matthews, Debra, Assistant Professor
College of Nursing
PHD, Washington University, 2014

Matthews, Pamela R, Professor
English
PHD, Duke University, 1988

Matthews, Sharon D, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, New Mexico State University, 2007

Matusevich, Laura F, Professor
Mathematics
PHD, University of California, Berkeley, 2002

Mawk, Elmo J, Instructional Assistant Professor
Chemistry
PHD, Texas A&M University, 1999

Maxwell, Steven A, Associate Professor
College of Medicine
PHD, The University of Texas Health Science Center at Houston, 1985

May, Larry W, Instructional Assistant Professor
College of Science
PHD, Texas A & M University, 2015

May, Matthew S, Associate Professor
Communication
PHD, University of Minnesota, 2009

May, Reuben A, Professor
Sociology
PHD, University of Chicago, 1996

Mayer, Richard John, Adjunct Professor
Industrial & Systems Eng
DOC, Texas A&M University, 1998

Mays, Glennon B, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1976

McAdams II, Daniel A, Professor
Mechanical Engineering
PHD, University of Texas - Austin, 1999

McAnally, Mary L, Professor
Accounting
PHD, Stanford University, 2011

McCain Jr, William D, Visiting Professor
Petroleum Engineering
PHD, Georgia Institute of Technology, 1964

McCarl, Bruce A, Distinguished Professor
Agricultural Economics
PHD, The Pennsylvania State University, 1973

McCarthy, Sandra L, Clinical Associate Professor
Comprehensive Dentistry
DDS, Marquette University School of Dentistry, 1982

McCartney, Stephanie A, Lecturer
Chemistry
PHD, George Washington University, 2009

McCool, Katherine Elizabeth, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, The Ohio State University, 2012

McCord, Gary C, Clinical Professor
College of Medicine
MD, University of Texas Medical Branch, 1983

McCoul, Melissa D, Lecturer
English
PHD, University of Notre Dame, 2017

McCoy, John Robert, Adjunct Professor
School of Law
JD, University of Houston, 1981

McCreedy, Dylan, Assistant Professor
Biology
PHD, Washington University, St. Louis, 2013

McCubbins, Andrew, Assistant Professor
Ag Leadership, Educ & Comm
PHD, Iowa State University, 2016

McDaniel, Stephen W, Professor
Marketing
PHD, University of Arkansas, 1979

McDeavitt, Sean M, Associate Professor
Materials Science & Engr
PHD, Purdue University, 1992

McDeavitt, Sean M, Professor
Nuclear Engineering
PHD, Purdue University, 1992

McDonald, Anthony D, Assistant Professor
Industrial & Systems Eng
PHD, University of Wisconsin - Madison, 2014

McDonald, Stephen H, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1980

McDonald, Thomas J, Professor
Environmental & Occpntl Hlth
PHD, Texas A&M University, 1988

McDougall, Mary P, Associate Professor
Biomedical Engineering
PHD, Texas A&M University, 2004

McEachern, George R, Visiting Professor
Horticultural Sciences
PHD, Texas A&M University, 1973

McElroy, Audrey, Professor & Extension Specialist
Poultry Science
PHD, Texas A&M University, 1998

McGeachin, Robert B, Associate Professor
TAMU Libraries
PHD, Texas A&M University, 1980

McGowan, Annie L, Associate Professor
Accounting
PHD, University of North Texas, 1994

McGrath, James J, Professor
School of Law
JD, Howard University, 1997

McGreal, Paul Eugene, Visiting Professor
Management
LLM, Yale Law School, 1994
JD, Dedman School of Law, Southern Methodist University, 1992

McGregor, Alistair, Associate Professor
College of Medicine
PHD, University of Glasgow, 1994

McGuire, Sean T, Associate Professor
Accounting
PHD, University of Georgia, 2008

McGuire, Susan S, Clinical Assistant Professor
Pediatric Dentistry
DDS, Louisiana State University Health Sciences Center at New Orleans, 1986

McInnes, Kevin J, Professor
Soil & Crop Sciences
PHD, Kansas State University, 1985

McInnis, Verity G, Senior Lecturer
History
PHD, Texas A&M University, 2012

McIntosh, William A, Professor
Sociology
PHD, Iowa State University, 1975

McIntyre, David H, Lecturer
Public Service & Administration
PHD, University of Maryland - College Park, 1999

McIntyre, Peter M, Professor
Physics & Astronomy
PHD, University of Chicago, 1973

McKeown, Debra, Associate Professor
Teaching, Learning & Culture
PHD, Vanderbilt University, 2012

McKim, Billy R, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2010

McKinley Jr, William J, Senior Lecturer
Horticultural Sciences
MAG, Texas A&M University, 1983

McKinney, Matthew R, Lecturer
English
PHD, University of Nevada- Reno, 2017

McKnight, Jason R, Clinical Assistant Professor
College of Medicine
MD, University of Texas Health Science Center - Houston, 2014

McKnight, Thomas D, Professor
Biology
PHD, University of Georgia, 1983

McLaughlin Darlene, Clinical Assistant Professor
College of Medicine
MD, The University of Texas Health Science Center at Dallas, 1980

McLaughlin, Timothy D, Associate Professor
Visualization
MS, Texas A&M University, 1994

McLeod, Michael Reilly, Clinical Assistant Professor
College of Medicine
MD, University of Texas Southwestern Medical School, 1996

McMahan, Uel J, Professor
Biology
PHD, University of Tennessee, 1964

McMaughan Moudouni, Darcy K, Assistant Professor
Health Policy & Management
PHD, Texas A&M University Health Science Center, 2010

McMurray, David N, Professor Emeritus
College of Medicine
PHD, University of Wisconsin, 1972

McNamara, Ann M, Associate Professor
Visualization
PHD, University of Bristol, UK, 2000

McNamara, Sarah J, Assistant Professor
History
PHD, University of North Carolina at Chapel Hill, 2016

McNaughten, Dennis Lee, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1993

McNeil, Lawrence R, Visiting Associate Professor
Economics
PHD, Howard University, 2008

McNeill, Elisa H, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2010

McNew Hovenden, Danette, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1988

McShane II, Michael J, Professor
Biomedical Engineering
PHD, Texas A&M University, 1999

McShane II, Michael J, Professor
Materials Science & Engr
PHD, Texas A&M University, 1999

McVay, Duane A, Professor
Petroleum Engineering
PHD, Texas A&M University, 1994

McVay, Matilda W, Instructional Associate Professor
Mechanical Engineering
PHD, Texas A&M University, 1996

McWatters, Michael R, Adjunct Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1973

McWhirter, David B, Professor
English
PHD, University of Virginia, 1984

McWhorter, Alton G, Clinical Professor
Pediatric Dentistry
DDS, University of Tennessee Medical Units, 1979

Meagher, Mary W, Professor
Psychological & Brain Sciences
PHD, University of North Carolina at Chapel Hill, 1989

Means Coleman, Robin Renee, Professor
Communication
PHD, Bowling Green State University, 1996

Medina Cetina, Zenon, Associate Professor
Civil & Environmental Engineering
PHD, John Hopkins University, 2007
PHD, Johns Hopkins University, 2007

Medina Cetina, Zenon, Associate Professor
Petroleum Engineering
PHD, John Hopkins University, 2007
PHD, Johns Hopkins University, 2007

Medina Palma, Paolina Del Car, Assistant Professor
Finance
PHD, Northwestern University, 2017

Medina, Raul F, Professor
Entomology
PHD, University of Maryland, College Park, 2005

Medlock, John R, Adjunct Professor
School of Law
JD, Texas Wesleyan University, 2007

Meek, Thomas D, Professor
Biochemistry & Biophysics
PHD, Pennsylvania State University, 1981

Meer, Jonathan, Professor
Economics
PHD, Stanford University, 2009

Mehta, Ranjana K, Associate Professor
Industrial & Systems Eng
PHD, Virginia Tech, 2011

Meier, Kenneth J, Distinguished Professor
Political Science
PHD, Syracuse University, 1975

Meier, Kenneth J, Distinguished Professor
Public Service & Administration
PHD, Syracuse University, 1975

Meigs, Randy, Adjunct Professor
School of Law
DJ, The University of Texas School of Law, 1985

Meininger, Cynthia, Professor
College of Medicine
PHD, Texas A&M University, 1987

Meininger, Cynthia J, Professor
College of Medicine
PHD, Texas A&M University, 1987

Melchor, Nyria, Adjunct Professor
School of Law
JD, Harvard University, 1992

Melconian, Daniel G, Associate Professor
Physics & Astronomy
PHD, Simon Fraser University, 2006

Mendoza, Itza, Assistant Professor
Environmental & Occpnl Hlth
PHD, Texas A&M University, 2007

Menet, Jerome, Assistant Professor
Biology
PHD, Louis Pasteur University, 2003

Menon, Rani, TEES Assistant Research Scientist
Chemical Engineering
PHD, The University of Mississippi, 2011

Mentz, George, Adjunct Professor
School of Law
JD, Loyola University, 1996

Menzel, Christopher P, Professor
Philosophy & Humanities
PHD, University of Notre Dame, 1984

Mercieca, Jennifer R, Associate Professor
Communication
PHD, University of Illinois at Urbana - Champaign, 2003

Mercier, Richard S, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1985

Merlin, Christine, Assistant Professor
Biology
PHD, University Pierre and Marie Curie, 2006

Merrell Jr, William J, Professor
Marine Science
PHD, Texas A&M University, 1971

Merrill, Jeremy, Assistant Professor
Land Arch & Urban Planning
PHD, Kansas State University, 2014

Mestrovic, Stjepan G, Professor
Sociology
PHD, Syracuse University, 1982

Metters, Richard D, Professor
Information & Operations Mgmt
PHD, University of North Carolina - Chapel Hill, 1993

Meyer, Michelle Annette, Assistant Professor
Land Arch & Urban Planning
PHD, Colorado State University, 2013

Michalski, Krzysztof A, Associate Professor
Electrical & Computer Eng
PHD, University of Kentucky, 1981

Michaudel, Quentin, Assistant Professor
Chemistry
PHD, The Scripps Research Institute, 2015

Michaudel, Quentin, Assistant Professor
Materials Science & Engr
PHD, The Scripps Research Institute, 2015

Mickelson, Kimberley, Visiting Associate Professor
Land Arch & Urban Planning
JD, The University of Texas School of Law, 1986

Middlebrooks, Mary W, Lecturer
Teaching, Learning & Culture
PHD, Sam Houston State University, 1973

Mier, Nelda, Instructional Associate Professor
Hlth Promotion & Comm Hlth Sci
PHD, University of New Mexico, 2002

Mies, William L, Visiting Professor
Animal Science
PHD, University of Missouri, 1971

Miglietta, Maria P, Assistant Professor
Marine Biology
PHD, Duke University, 2005

Miles, Bryant W, Senior Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 1998

Miles, Richard B, Professor
Aerospace Engineering
PHD, Stanford University, 1972

Mileski, Joan P, Professor
Maritime Business Administration
PHD, University of Texas at Dallas, 2000

Miller III, Amp W, Professor
Comprehensive Dentistry
DDS, Baylor University College of Dentistry, 1973

Miller Jr, Julian C, Visiting Professor
Horticultural Sciences
PHD, Michigan State University, 1972

Miller, Barbara H, Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1983

Miller, Brent V, Associate Professor
Geology & Geophysics
PHD, Dalhousie University, Canada, 1997

Miller, Glen A, Instructional Assistant Professor
Philosophy & Humanities
PHD, University of North Texas, 2015

Miller, Gretchen R, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Berkeley, 2009

Miller, Jeremy R, Lecturer
Communication
PHD, Texas A&M University, 2012

Miller, Michael J, Associate Professor
College of Pharmacy
DrPH, University of Pittsburgh, 2004

Miller, Rhonda K, Professor
Animal Science
PHD, Colorado State University, 1983

Miller, Scott L, Professor
Electrical & Computer Eng
PHD, University of California, San Diego, 1988

Miller, Stephen J, Professor
Hispanic Studies
PHD, The University of Chicago, 1976

Mills, Regina, Assistant Professor
English
PHD, University of Texas, Austin, 2018

Milman, Robert M, Clinical Assistant Professor
College of Medicine
MD, Texas A&M University, 1986

Milstein, Sloane H, Clinical Assistant Professor
Health & Kinesiology
EDD, Southern Connecticut State University, 2013

Miner, Kathi N, Associate Professor
Psychological & Brain Sciences
PHD, University of Michigan, 2004

Mioduszewski, Saskia, Professor
Physics & Astronomy
PHD, University of Tennessee, 1999

Mir, Nordine, Professor
Texas A&M University at Qatar
PHD, University of Rouen, France, 1998

Mirabolfathi, Nader, Research Associate Professor
Physics & Astronomy
PHD, University of Paris XI, 2002

Miranda, Malathi S, Clinical Assistant Professor
Public Health Sciences
DDS, Mangalore University, India, 1995

Miranda, Rajesh C, Professor
College of Medicine
PHD, University of Rochester, 1989

Miranda, Valerian, Associate Professor
Architecture
PHD, Texas A&M University, 1988
MAR, Texas A&M University, 1984

Mirza, Saadat, Professor of the Practice
College of Engineering
PHD, University of South Hampton, 1983

Misemer, Sarah M, Professor
Hispanic Studies
PHD, University of Kansas, 2001

Mishra, Jayshree, Research Assistant Professor
College of Pharmacy
PHD, Indian Institute of Technology, Kharagpur, 2005

Mitchell, Brett, Associate Professor
College of Medicine
PHD, Georgia Health Sciences University, 2003

Mitchell, Brett M, Associate Professor
College of Medicine
PHD, Georgia Health Sciences University, 2003

Mitchell, Stacey A, Clinical Associate Professor
College of Nursing
DNP, University of Tennessee Health Science Center, 2006

Mitchell, Thomas W, Professor
School of Law
LLM, University of Wisconsin - Madison, 1999
JD, Howard University School of Law, 1993

Mittal, Chiraag, Assistant Professor
Marketing
PHD, University of Minnesota, 2016

Miyamoto, Tetsuya, Research Assistant Professor
College of Medicine
PHD, Nagoya University, 2004

Mize, Britt A, Associate Professor
English
PHD, The University of North Carolina at Chapel Hill, 2003

Mjelde, James W, Professor
Agricultural Economics
PHD, University of Illinois at Urbana - Champaign, 1985

Moble, Benedict, Assistant Professor
Aerospace Engineering
PHD, University of Maryland, 2010

Moczygemba, Margarita M, Research Assistant Professor
Institute of Biosciences & Tec
PHD, State University of New York at Stony Brook, 1997

Mohanty, Binayak P, Professor
Biological & Agricultural Eng
PHD, Iowa State University, 1992

Mohiuddin, Mohammad W, Research Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2008

Mohler, Robert R, Senior Lecturer
Marine Science
PHD, Texas A&M University, 1994

Mohseni, Mahdi, Assistant Professor
Finance
PHD, Boston College, 2015

Mohtar, Rabi H, Professor
Biological & Agricultural Eng
PHD, Michigan State University, 1994

Mohtar, Rabi H, Professor
Civil & Environmental Engineering
PHD, Michigan State University, 1994

Momcilovic, Petar, Associate Professor
Industrial & Systems Eng
PHD, Columbia University, 2003

Montague, Marcia L, Visiting Assistant Professor
Educational Psychology
PHD, Texas A&M University, 2009

Montalvo-Liendo, Nora, Assistant Professor
College of Nursing
PHD, The University of Texas Health Science Center at Houston, 2009

Moore, Georgianne W, Associate Professor
Ecosystem Science & Mgmt
PHD, Oregon State University, 2004

Moore, Janie M, Assistant Professor
Biological & Agricultural Eng
PHD, Purdue University, 2015

Moore, John Michael, Instructional Assistant Professor
Computer Science & Engineering
PHD, Texas A&M University, 2007

Moore, Kevin M, Executive Professor
Finance
MS, Johns Hopkins University, 2013

Moore, Lori L, Associate Professor
Ag Leadership, Educ & Comm
PHD, University of Florida, 2003

Moore, Loulou M, Clinical Associate Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 1993

Moore, Melinda S, Professor
Health & Kinesiology
PHD, Ball State University, 1997

Moore, Wendy A, Associate Professor
Sociology
PHD, University of Minnesota, 2005

Mora-Zacarias, Miguel A, Professor
Wildlife & Fisheries Sciences
PHD, University of California, Davis, 1990

Moreira, Rosana G, Professor
Biological & Agricultural Eng
PHD, Michigan State University, 1989

Moreira-Tamayo, Oscar, Professor of the Practice
Electrical & Computer Eng
PHD, Texas A&M University, 1996

Moreiras, Alberto, Professor
Hispanic Studies
PHD, University of Georgia, 1987

Morel, Jim E, Professor
Nuclear Engineering
PHD, The University of New Mexico, 1979

Moreno Centeno, Erick, Associate Professor
Industrial & Systems Eng
PHD, University of California, Berkeley, 2010

Moreno, Kara L, Veterinary Resident
Vet Small Animal Clinical Sc
MD, University of Minnesota, 2005

Moreno, Michael R, Assistant Professor
Biomedical Engineering
PHD, Texas A&M University, 2009

Moreno, Michael R, Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2009

Morey, Anne M, Associate Professor
English
PHD, University of Texas- Austin, 1998

Morey, Leslie C, Professor
Psychological & Brain Sciences
PHD, University of Florida, 1981

Morgan, Cristine L, Professor
Soil & Crop Sciences
PHD, University of Wisconsin, 2003

Morgan, Joseph A, Senior Professor
Eng Tech & Ind Distribution
DEN, Texas A&M University, 1983

Moridis, George J, Professor
Petroleum Engineering
PHD, Texas A&M University, 1987

Morita, Nobuo, Professor
Petroleum Engineering
PHD, The University of Texas at Austin, 1974

Mormann, Felix, Professor
School of Law
JD, University of Passau, 2010
LLM, University of California Berkeley School of Law, 2008

Morris, Jeffrey M, Associate Professor
Performance Studies
PHD, University of North Texas, 2007

Morris, Theresa M, Professor
Sociology
PHD, Texas A&M University, 2000

Morrisey, Michael A, Professor
Health Policy & Management
PHD, University of Washington, Seattle, 1979

Morrison, Angela D, Associate Professor
School of Law
JD, University of Nevada Las Vegas, 2005

Morrison, Jenny K, Lecturer
George Bush School of Govern
PHD, New York University, 2008

Morrison, Mike L, Professor
Wildlife & Fisheries Sciences
PHD, Oregon State University, 1982

Morriess, Andrew P, Professor
School of Law
PHD, Massachusetts Institute of Technology, 1994
JD, University of Texas at Austin, 1984

Mortari, Daniele, Professor
Aerospace Engineering
PHD, University La Sapienza of Rome, 1980

Mortazavi, Jack B, Assistant Professor
Computer Science & Engineering
PHD, University of California - Los Angeles, 2014

Moscarello, Justin M, Assistant Professor
Psychological & Brain Sciences
PHD, University of California, Santa Barbara, 2010

Moser Melanie, Instructional Professor
Foundational Sciences
PHD, University of Houston, 1977

Mostafavidarani, Ali, Assistant Professor
Civil & Environmental Engineering
PHD, Purdue University, 2013

Moulton, Orissa M, Instructional Assistant Professor
Marine Biology
PHD, The University of Chicago, 2016

Mouneimne, Roula, Research Professor
Vet Integrative Biosciences
PHD, Lyon I University, 1984

Moyes, Rita J, Instructional Associate Professor
Biology
PHD, Texas A&M University, 1992

Moyna, Maria I, Professor
Hispanic Studies
PHD, University of Florida, 2000

Mu, Ren, Associate Professor
International Affairs
PHD, Michigan State University, 2004

Muellerhinze, Maxine L, Clinical Assistant Professor
College of Nursing
PHD, The University of Texas - Austin, 1988

Muir, Kristopher D, Clinical Assistant Professor
College of Business
EDD, Walden University, 2010

Mukherji, Partha, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 2001

Mulcahy, Angela M, Clinical Assistant Professor
College of Nursing
PHD, University of Texas -Tyler, 2018

Mulenga, Albert, Professor
Veterinary Pathobiology
PHD, Hokkaido University, 1999

Muliana, Hanifah, Professor
Mechanical Engineering
PHD, Georgia Institute of Technology, 2004

Mullen, Christine A, Senior Lecturer
Chemistry
PHD, University of California, San Diego, 2000

Mullet, John E, Professor
Biochemistry & Biophysics
PHD, University of Illinois - Urbana-Champaign, 1981

Mulvaney, Timothy M, Professor
School of Law
JD, Villanova University School of Law, 2004

Mumpower, Jeryl L, Professor Emeritus
Public Service & Administration
PHD, University of Colorado, 1976

Muneoka, Ken, Professor
Vet Physiology & Pharmacology
PHD, University of California - Irvine, 1983

Munro, Robert, Adjunct Professor
School of Law
EDD, University of Florida, 1981
JD, University of Iowa, 1973

Muns, Christine A, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2012

Munson, David N, Lecturer
Communication
PHD, Texas A&M University, 2018

Munster, Clyde L, Senior Professor
Biological & Agricultural Eng
PHD, North Carolina State University, 1992

Murano, Peter S, Senior Associate Professor
Nutrition & Food Science
PHD, Virginia Tech, 1989

Murchison, David A, Research Assistant Professor
College of Medicine
PHD, The University of Texas - Austin, 1991

Murchison, David F, Adjunct Professor
Diagnostic Sciences
DDS, Baylor College of Dentistry, 1980

Murguia, Edward, Professor Emeritus
Sociology
PHD, University of Texas, 1978

Murphrey, Theresa P, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1997

Murphy, John F, Instructional Associate Professor
School of Law
JD, The University of Texas School of Law, 1993

Murphy, Robin R, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1992

Murphy, Timothy H, Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1995

Murphy, William J, Professor
Vet Integrative Biosciences
PHD, The University of Tulsa, 1997

Murray, Seth C, Associate Professor
Soil & Crop Sciences
PHD, Cornell University, 2008

Musoba, Glenda D, Associate Professor
Educ Admn & Human Resource Dev
PHD, Indiana University, 2004

Musser, Jeffrey M, Clinical Professor
Veterinary Pathobiology
PHD, North Carolina State University, 2000
DVM, Virginia Tech, 1989

Musser, Siegfried M, Professor
College of Medicine
PHD, California Institute of Technology, 1996

Muthuchamy, Mariappan, Professor
College of Medicine
PHD, Mudarai Kamaraj University, India, 1991

Muthuchamy, Mariappan, Professor
College of Medicine
PHD, Mudarai Kamaraj University, India, 1991

Muyia, Machuma A, Clinical Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Arkansas, 2008

Muzzin, Kathleen B, Clinical Professor
Dental Hygiene
MS, University of Missouri - Kansas City, 1985

Mykoniatis, Nikolaos, Instructional Assistant Professor
Maritime Business Administration
PHD, The Pennsylvania State University, 2013

Myles II, Kevin M, Professor
Entomology
PHD, Colorado State University, 2003

Myser, Scott A, Adjunct Assistant Professor
Orthodontics
DDS, Texas A&M University Baylor College of Dentistry, 2008

Na, Byoungjoon, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2010

Nabity, Mary B, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2010
DVM, Cornell University, 2002

Nafukho, Fredrick M, Professor
Educ Admn & Human Resource Dev
PHD, Louisiana State University and A&M College, 1998

Nagarathnam, Bharani B, Instructional Assistant Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 2016

Nagaya, Naomi, Research Assistant Professor
Psychological & Brain Sciences
PHD, University of Southern California, 1993

Nagy, William W, Professor
Comprehensive Dentistry
DDS, Ohio State University, 1970

Naidu, Aparna G, Clinical Associate Professor
Diagnostic Sciences
DDS, Northwestern University Evanston, 2001

Nair Radhika, Instructional Assistant Professor
Foundational Sciences
PHD, University of Nevada, 2009

Nair, Madhu K, Professor & Director
Diagnostic Sciences
DMD, University of Gothenburg, 2003
DMD, University of Pittsburgh, 2000

Nakamura, Eduardo F, Visiting Associate Professor
Computer Science & Engineering
PHD, Federal University of Minas Gerais, 2007

Nan, Beiyan, Assistant Professor
Biology
PHD, Peking University, 2007

Napper, Larry C, Professor of the Practice
International Affairs
MS, University of Virginia, 1974

Naraghi, Mohammad, Associate Professor
Aerospace Engineering
PHD, University of Illinois at Urbana Champaign, 2009

Naraghi, Mohammad, Assistant Professor
Materials Science & Engr
PHD, University of Illinois at Urbana Champaign, 2009

Narayanan, Krishna R, Professor
Computer Science & Engineering
PHD, Georgia Institute of Technology, 1998

Narayanan, Krishna R, Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 1998

Narcowich, Francis J, Professor
Mathematics
PHD, Princeton University, 1972

Nascentes Alves, Ibero, Professor of the Practice
Petroleum Engineering
PHD, University of Tulsa, 1991

Nasr-El-Din, Hisham A, Professor
Petroleum Engineering
PHD, University of Saskatchewan, 1984

Nasrabadi, Hadi, Assistant Professor
Petroleum Engineering
PHD, Imperial College London, United Kingdom, 2006

Natarajarathinam, Malini, Associate Professor
Eng Tech & Ind Distribution
DOC, University of Alabama, 2007

Natsios, Andrew S, Executive Professor
International Affairs
PHD, Harvard University, 1979

Naugle, Donald G, Professor
Materials Science & Engr
PHD, Texas A&M University, 1965

Naugle, Donald G, Professor
Physics & Astronomy
PHD, Texas A&M University, 1965

Navas De Solis, Cristobal, Clinical Assistant Professor
Vet Large Animal Clinical Sc
PHD, Universidad Autonoma de Barcelona, 2013
DVM, Universidad Cardenal Herrera CEU, 2001

Ndeffo Mbah, Martial Loth, Assistant Professor
Vet Integrative Biosciences
PHD, University of Cambridge, UK, 2010

Ndubisi, Forster O, Professor
Land Arch & Urban Planning
PHD, University of Waterloo, 1987

Neal, Gabriel A, Clinical Assistant Professor
College of Medicine
MD, The University of Oklahoma, 2001

Nederman, Cary J, Professor
Political Science
PHD, York University, 1983

Needleman, Alan, Professor (courtesy appointment)
Mechanical Engineering
PHD, Harvard University, 1971

Needleman, Alan, Distinguished Professor
Materials Science & Engr
PHD, Harvard University, 1971

Neely, Haly L, Assistant Professor
Soil & Crop Sciences
PHD, Texas A&M University, 2013

Neighbors, Ryan C, Lecturer
English
PHD, Texas A&M University, 2017
MFA, Hollins University, 2014

Nekrashevych, Volodymyr, Professor
Mathematics
PHD, Taras Shevchenko National University, Russia, 1998

Nelson Jr, James K, Professor of Instruction
Civil & Environmental Engineering
PHD, University of Houston, 1983

Nelson, Claudia B, Professor
English
PHD, Indiana University, 1989

Nelson, Garrett S, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, University Of California-Los Angeles, 1999

Nepal, Bimal P, Associate Professor
Eng Tech & Ind Distribution
PHD, Wayne State University, 2005

Neshyba, Monica V, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, University of Texas - Austin, 2012

Nessler, Craig L, Professor
Horticultural Sciences
PHD, Indiana University, 1976

Nevels, Robert D, Professor
Electrical & Computer Eng
PHD, University of Mississippi, 1979

Newell, Kirsten, Assistant Professor
Educational Psychology
PHD, University of Minnesota - Twin Cities, 2018

Newell-Fugate, Anne E, Assistant Professor
Vet Physiology & Pharmacology
PHD, University of Illinois-Urbana Champaign, 2012
DVM, North Carolina State University, 2004

Newman, Galen D, Associate Professor
Land Arch & Urban Planning
PHD, Clemson University, 2010
MLA, Auburn University, 2006

Newman, Joseph T, Adjunct Associate Professor
Biomedical Sciences
PHD, University of Texas Medical School at San Antonio, 1973

Newman, Julie, Professor
Geology & Geophysics
PHD, University of Rochester, 1993

Newman, Neal F, Professor
School of Law
JD, Howard University, 1998

Newton, Howard J, Senior Professor
Statistics
PHD, SUNY Buffalo, 1975

Ng, Desmond W, Associate Professor
Agricultural Economics
PHD, University of Illinois at Urbana-Champaign, 2001

Nghiem, Peter P, Assistant Professor
Vet Integrative Biosciences
PHD, George Washington University, 2014
DVM, Texas A&M University, 2008

Nguyen, Cam Van, Professor
Electrical & Computer Eng
PHD, University of Central Florida, 1990

Nguyen, Duy T, Research Assistant Professor
Nuclear Engineering
DEN, Ritsumeikan University, 2010

Nha, Hyon Cheol, Professor
Texas A&M University at Qatar
PHD, Seoul National University, 2002

Ni, Yang, Assistant Professor
Statistics
PHD, Rice University, 2015

Nichols, Anne B, Associate Professor of the Practice
Architecture
PHD, University of Illinois, 2000

Nichols, John M, Associate Professor
Construction Science
PHD, University of Newcastle, Australia, 2002

Nicksic, Hildi M, Clinical Assistant Professor
Health & Kinesiology
PHD, The University of Texas, 2015

Nie, Xiaofeng, Associate Professor
Eng Tech & Ind Distribution
PHD, University at Buffalo (SUNY), 2008

Niedzwecki, John M, Professor
Civil & Environmental Engineering
PHD, The Catholic University of America, 1977

Nielsen-Gammon, John W, Professor
Atmospheric Sciences
PHD, Massachusetts Institute of Technology, 1990

Nikolov, Zivko L, Professor
Biological & Agricultural Eng
PHD, Iowa State University, 1986

Nippe, Michael, Assistant Professor
Chemistry
PHD, University of Wisconsin - Madison, 2011

Nizamutdinov, Damir, Research Associate Professor (Adjunct)
College of Medicine
PHD, Gyeongsang National University, 2009

Noh, Youngre, Instructional Assistant Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 2015

Noormets, Asko, Associate Professor
Ecosystem Science & Mgmt
PHD, Michigan Technological University, 2001

Norman, Keri N, Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2010

Norris, William J, Associate Professor
International Affairs
PHD, Massachusetts Institute of Technology, 2010

North, Jerry R, Research Professor
Atmospheric Sciences
PHD, University of Wisconsin, 1966

North, Simon W, Professor
Chemistry
PHD, University of California, Berkeley, 1995

Norton, Jerry D, Lab Instructor
Biology
PHD, The University of Texas at Austin, 1994

Norton, John M, Senior Lecturer
Information & Operations Mgmt
BBA, Baylor University, 1981

Noshadravan, Arash, Assistant Professor
Civil & Environmental Engineering
PHD, University of Southern California, 2011

Nounou, Hazem N, Professor
Texas A&M University at Qatar
PHD, Ohio State University, 2000

Nounou, Mohamed N, Professor
Texas A&M University at Qatar
PHD, Ohio State University, 2000

Noureldin, Amal Ahmed K, Clinical Associate Professor
Public Health Sciences
DDS, Cairo University, 1993

Nowka, Kevin J., Professor Of The Practice
Electrical & Computer Eng
PHD, Stanford University, 1995

Nowotarski, Christopher J, Assistant Professor
Atmospheric Sciences
PHD, Pennsylvania State University, 2013

Noynaert, Samuel F, Assistant Professor
Petroleum Engineering
PHD, Texas A&M University, 2013

Ntaimo, Lewis, Professor
Industrial & Systems Eng
PHD, University of Arizona, 2004

Nutan, Mohammad T, Associate Professor
College of Pharmacy
PHD, Texas Tech University, 2004

Nwabueze, Uchenna M, Instructional Professor
Maritime Business Administration
PHD, Sheffield Hallam University, City Campus, 1995

Nyakiti, Luke O, Assistant Professor
Marine Engineering Technology
PHD, Texas Tech University, 2008

Nyakiti, Luke O, Assistant Professor
Materials Science & Engr
PHD, Texas Tech University, 2008

Nyman, Elizabeth A, Assistant Professor
Liberal Studies
PHD, Florida State University, 2010

O'Brien, Diana Z, Associate Professor
Political Science
PHD, Washington University, 2012

O'Farrell, Mary A, Associate Professor
English
PHD, University of California, Berkeley, 1991

O'Reilly, Kathleen M, Professor
Geography
PHD, University of Iowa, 2002

OPENGART, ROSE, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Georgia, 2003

Obeidat, Suleiman M, Instructional Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Oklahoma, 2008

Ober, Raimund, Research Professor
College of Medicine
PHD, University of Cambridge, 1988
PHD, Cambridge University, 1987

Ober, Raimund J, Professor
Biomedical Engineering
PHD, University of Cambridge, 1988
PHD, Cambridge University, 1987

Oberhelman, Steven M, Professor
International Studies
PHD, University of Minnesota, 1981

Obrien, Michael J, Professor
Architecture
MAR, Virginia Tech, 1982

Oflin, Theresa U, Instructional Assistant Professor
College of Pharmacy
PHARM, University of Houston, 2004

Ogden, Benjamin G, Assistant Professor
Political Science
PHD, Boston University, 2016

Ogilvie, Andrea M, Instructional Assistant Professor
College of Engineering
PHD, Virginia Tech, 2017

Ogletree, Quinita D, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2012

Ohlendorf, Alex K, Veterinary Resident Instructor
Vet Large Animal Clinical Sc
DVM, University of California, Davis, 2015

Ohsfeldt, Robert L, Professor
Health Policy & Management
PHD, University of Houston, 1983

Okumoto, Sakiko, Associate Professor
Soil & Crop Sciences
PHD, Tübingen University, 2003

Oliva Chavez, Adela, Assistant Professor
Entomology
PHD, University of Minnesota, 2014
BVetM, Escuela Agrícola Panamericana, 2003

Oliva, Rogelio, Professor
Information & Operations Mgmt
PHD, MIT, 1996

Olivera, Francisco, Associate Professor
Civil & Environmental Engineering
PHD, University of Texas, 1996

Olson, James M, Professor of the Practice
International Affairs
JD, The University of Iowa, 1969

Olson, Joanne K, Professor
Teaching, Learning & Culture
PHD, University of Southern California, 1999

Olson, Nicholas John, Assistant Professor
Marketing
PHD, University of Minnesota, 2018

Ompendoguet, Lizette O, Associate Professor
Educational Psychology
PHD, University of Missouri - Columbia, 2009

Omran, Mohamed T, Clinical Assistant Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1995

Onica, Constantin, Instructional Assistant Professor
Mathematics
PHD, Texas A&M University, 2005

Opperman, Lynne A, Regents Professor
Biomedical Sciences
PHD, University of the Witwatersrand, South Africa, 1985

Oran, Elaine, Professor
Aerospace Engineering
PHD, Yale University, 1972

Orr, Joseph M, Assistant Professor
Psychological & Brain Sciences
PHD, University of Michigan, 2011

Orsi, Alejandro H, Professor
Oceanography
PHD, Texas A&M University, 1993

Ortega-Aguilar, Dionisio B, Instructional Assistant Professor
Hispanic Studies
PHD, Stanford University, 1986

Ortiz Sierra, Paula A, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Institute of Health Sciences - Medellin, Columbia, 1997

Ory, Marcia G, Professor
Environmental & Occpnl Hlth
PHD, Purdue University, 1976

Osburn, Wesley N, Associate Professor
Animal Science
PHD, University of Nebraska-Lincoln, 1996

Osinde Jr, Eliphas A, Adjunct Assistant Professor
Diagnostic Sciences
DDS, Texas A&M University Baylor College of Dentistry, 2015

Ostadalimakhmalbaf, Mohammadreza, Visiting Lecturer
Architecture
PHD, Texas A&M University, 2018

Ostrovskaya, Natela G, Senior Lecturer
Nuclear Engineering
PHD, Texas A&M University, 2005

Oswald, John D, Professor
Entomology
PHD, Cornell University, 1991

Otey, Jeffrey M, Instructional Assistant Professor
Civil & Environmental Engineering
PHD, Universitat Politècnica de València, Spain, 2017

Outlaw, Joe, Visting Professor
Agricultural Economics
PHD, Texas A&M University, 1992

Outley, Corliss D, Associate Professor
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2000

Ouyang, Hongjiao, Associate Professor
Endodontics
DMD, University of Pittsburgh, 2008
PHD, University of Michigan, 2000

Overbye, Thomas J, Professor
Electrical & Computer Eng
PHD, University of Wisconsin, 1991

Ozerov, Oleg V, Professor
Chemistry
PHD, University of Kentucky, 2000

Ozmetin, Ali E, Senior Lecturer
College of Engineering
PHD, Texas A&M University, 2009

Ozmetin, Ali E, Research Assistant Professor
Materials Science & Engr
PHD, Texas A&M University, 2009

Paal, Stephanie G, Assistant Professor
Civil & Environmental Engineering
PHD, Georgia Institute of Technology, 2013

Pace William, Executive Professor
Management
PHD, Capella University, 2017

Pace, Kathleen A, Clinical Assistant Professor
Pediatric Dentistry
DDS, State University of New York, Buffalo School of Dentistry, 1977

Pacek, Alexander C, Professor
Political Science
PHD, University of Illinois at Urbana - Champaign, 1991

Packard, Mark G, Professor
Psychological & Brain Sciences
PHD, McGill University, 1991

Padron, Yolanda, Professor
Educational Psychology
EDD, University of Houston, 1985

Paetzold, Ramona L, Professor
Management
JD, Indiana University, 1990
PHD, Indiana University, 1979

Page, Robin L, Assistant Professor
College of Nursing
PHD, University of Texas at Austin, 2006

Pagilla, Prabhakar R, Professor
Mechanical Engineering
PHD, University of California, Berkeley, 1996

Pakhotina, Nataliya V, Lecturer
Economics
PHD, University of Florida, 2010

Palakurthi, Srinath, Professor
College of Pharmacy
DOC, Indian Institute of Chemical Technology, 2000

Palazzolo, Alan B, Professor
Mechanical Engineering
PHD, University of Virginia, 1981

Palermo, Samuel M, Associate Professor
Electrical & Computer Eng
PHD, Stanford University, 2007

Palmer, Clare A, Professor
Philosophy & Humanities
PHD, University of Oxford, 1993

Palmer, Douglas J, Professor Emeritus
Educational Psychology
PHD, University of California - Los Angeles, 1977

Palos, Edward A, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2012

Pals, Heili, Associate Professor
Sociology
PHD, Stanford University, 2006

Panahi, Ladan M, Clinical Assistant Professor
College of Pharmacy
DOC, University of Houston College of Pharmacy, 2008

Panchang, Vijaykumar G, Regents Professor
Ocean Engineering
PHD, University of Maine, 1985

Panchang, Vijaykumar G, Professor
Texas A&M University at Qatar
PHD, University of Maine, 1985

Panetta, Richard L, Professor
Atmospheric Sciences
PHD, University of Wisconsin, 1978

Panin, Vladislav M, Professor
Biochemistry & Biophysics
PHD, Moscow State University, 1990

Panina, Daria, Clinical Associate Professor
Management
PHD, Rutgers University, 2002

Pantuso, Terri B, Lecturer
English
PHD, University of Texas, San Antonio, 2009

Paouris, Grigorios, Professor
Mathematics
PHD, University of Crete, 2004

Papanikolas, Matthew A, Professor
Mathematics
PHD, Brown University, 1998

Papovich, Casey J, Professor
Physics & Astronomy
PHD, Johns Hopkins University, 2002

Pappas, Gregory F, Professor
Philosophy & Humanities
PHD, University of Texas at Austin, 1990

Pappu, Madhav, Clinical Assistant Professor
Information & Operations Mgmt
PHD, University of Tennessee, 1999

Paranjape, Vaidehi Vinay, Clinical Assistant Professor
Vet Small Animal Clinical Sc
BVSc, MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, 2009

Paredes Tobar, Lenin Marcelo, Assistant Professor
Ocean Engineering
PHD, University of Sao Paulo, Sao Paulo, Brazil, 2012

Parish, Janet T, Clinical Professor
Marketing
PHD, University of Alabama, 2002

Parish, Nancy B, Instructional Assistant Professor
Communication
PHD, University of Florida, 2013

Park, Hangu, Assistant Professor
Electrical & Computer Eng
PHD, Georgia Institute of Technology, 2017

Park, Kyeong, Professor
Marine Science
PHD, College of William and Mary, 1993

Park, Sung I, Assistant Professor
Electrical & Computer Eng
PHD, Stanford University, 2014

Park, William D, Professor
Biochemistry & Biophysics
PHD, University of Florida, 1977

Park, Yong Jong, Adjunct Assistant Professor
Orthodontics
DDS, Seoul Natl Uni Seoul Korea, 2000

Parke, Frederic I, Professor
Visualization
PHD, University of Utah, 1974

Parker, Dawn R, Clinical Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 1997

Parker, Jason C, Professor
History
PHD, University of Florida, 2002

Parra Carrasquer, Carlos, Clinical Assistant Professor
Periodontics
DDS, Universitat Internacional de Catalunya, 2009

Parrott, Thena E, Clinical Assistant Professor
College of Nursing
PHD, Texas A&M University, 1993

Parsaei, Hamid R, Professor
Texas A&M University at Qatar
PHD, University of Texas Arlington, 1984

Parvin, Christopher J, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2003

Pasciak, Joseph E, Professor
Mathematics
PHD, Cornell University, 1977

Passmore, Ashley A, Assistant Professor
International Studies
PHD, University of Chicago, 2007

Pate, Michael B, Professor
Mechanical Engineering
PHD, Purdue University, 1982

Patel, Paras B, Assistant Professor
Diagnostic Sciences
DDS, Howard University, 2011

Patel, Pooja H, Clinical Assistant Professor
College of Pharmacy
DOC, Purdue University, 2014

Patel, Rupande, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 1991

Patel, Simmi, Clinical Assistant Professor
Public Health Sciences
DDS, University of Texas Health Science Center-San Antonio, 2001

Pati, Debdeep, Associate Professor
Statistics
PHD, Duke University, 2012

Patrick, Kristin L, Assistant Professor
College of Medicine
PHD, Yale University, 2008

Patterson, Adam P, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Mississippi State University, 2001

Patterson, Carly A, Clinical Assistant Professor
Vet Physiology & Pharmacology
DVM, University of Illinois, 2011

Patterson, Megan Stiefel, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2016

Pattison, Kalani K, Lecturer
English
PHD, Baylor University, 2016

Paudyal, Sushil, Instructional Assistant Professor
Animal Science
PHD, Colorado State University, 2018

Pauli, Carol B, Instructional Associate Professor
School of Law
JD, Yeshiva University, 2007

Pavelka Jr, Miro A, Adjunct Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1977

Pavlova, Elena, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, Louisiana State University, 2017

Payne, Michael B, Clinical Assistant Professor
Diagnostic Sciences
DDS, Baylor College of Dentistry, 1981

Payne, Stephanie C, Professor
Psychological & Brain Sciences
PHD, George Mason University, 2000

Payne, Susan L, Associate Professor
Veterinary Pathobiology
PHD, Louisiana State University, 1983

Peacock, Walter Gillis, Professor
Land Arch & Urban Planning
PHD, University of Georgia, 1986

Peak, Charles W, Instructional Assistant Professor
Biomedical Engineering
PHD, Texas A&M University, 2018

Pearl, Frederic B, Associate Professor
Liberal Studies
PHD, Texas A&M University, 2001

Pearlstein, Gregory J, Associate Professor
Mathematics
PHD, UNIVERSITY OF MASSACHUSETTS AT AMHERST, 1999

Pearlstein, Rosanna, Lecturer
Mathematics
PHD, University of Massachusetts Amherst, 1998

Pearson, Chad J, Instructional Assistant Professor
TAMU Libraries
PHD, The University of Texas, 2006
MFA, Columbia College, 2002

Peddicord, Kenneth L, Professor
Nuclear Engineering
PHD, University of Illinois, 1972

Pedersen, Susan J, Associate Professor
Educational Psychology
PHD, University of Texas at Austin, 2000

Pei, Zhijian, Professor
Industrial & Systems Eng
PHD, University of Illinois, 1995

Pellois, Jean-Philippe, Professor
Biochemistry & Biophysics
PHD, University of Houston, 2002

Peng, Xu, Associate Professor
College of Medicine
MD, The Medical College of Tongji University, 2015

Peng, Xu, Associate Professor
College of Medicine
MD, The Medical College of Tongji University, 2015

Pennington, James D, Instructional Associate Professor
Chemistry
PHD, University of Michigan, 1998

Penrose, Mary M, Professor
School of Law
JD, Pepperdine University School of Law, 1993

Penson Jr, John B, Sr. Professor
Agricultural Economics
PHD, University of Illinois at Urbana-Champaign, 1973

Pentecost III, Aubrey R, Professor of the Practice
Architecture
DrPH, University of Texas, School of Public Health, 1982

Pepper, Alan E, Associate Professor
Biology
PHD, University of California, Davis, 1990

Peres, S Camille, Assistant Professor
Industrial & Systems Eng
PHD, Rice University, 2005

Peres, S Camille, Assistant Professor
Environmental & Occpnl Hlth
PHD, Rice University, 2005

Perez Patron, Maria J, Research Assistant Professor
Epidemiology & Biostatistics
PHD, Johns Hopkins University, Bloomberg School of Public Health, 2012

Perez Smith, Adriana M, Instructional Assistant Professor
Hispanic Studies
LLM, Southern Methodist University, 2005

Perez, Mayra, Instructional Assistant Professor
College of Medicine
MD, University of Texas Health Science Center, 2006

Perez, Nicholas D, Assistant Professor
Geology & Geophysics
PHD, University of Texas at Austin, 2015

Perez, Sebastian E, Clinical Assistant Professor
College of Pharmacy
DOC, Texas A&M Health Science Center College of Pharmacy, 2010

Perez, Stephanie A, Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 2012

Perkin, Joshua S, Assistant Professor
Wildlife & Fisheries Sciences
PHD, Kansas State University, 2012

Perlin, Marc, Professor and Associate Department Head
Ocean Engineering
PHD, University of Florida Gainesville, 1989

Perrott, Lisa J, Associate Professor
Educational Psychology
PHD, University of Virginia, 2001

Perry, Brittany N, Instructional Assistant Professor
Political Science
PHD, Duke University, 2013

Perry, Nandra L, Associate Professor
English
PHD, University of North Carolina at Chapel Hill, 2003

Petersen, Eric L, Professor
Mechanical Engineering
PHD, Stanford University, 1998

Petersen, Lene H, Instructional Assistant Professor
Marine Biology
PHD, Memorial University of New Foundland, 2010

Peterson, David O, Senior Professor
Biochemistry & Biophysics
PHD, Harvard University, 1977

Peterson, Donald, Professor
Biomedical Engineering
PHD, University of Connecticut, 1999

Peterson, Erik J, Assistant Professor
Political Science
PHD, Stanford University, 2017

Peterson, John R, Clinical Assistant Professor
Finance
PHD, Texas A&M University, 2002

Peterson, Noah G, Lecturer
English
PHD, Texas A&M University, 2017

Peterson, Steven L, Professor
College of Pharmacy
PHD, University of California - Davis, 1980

Peterson, Thomas, Instructional Professor
College of Medicine
PHD, The University of Oklahoma, 1977

Peterson, Thomas V, Instructional Professor
College of Medicine
PHD, The University of Oklahoma, 1977

Petrick, James F, Professor
Recreation, Park & Tourism Sc
PHD, Clemson University, 1999

Petrie, Ragan, Professor
Economics
PHD, University of Wisconsin - Madison, 2002

Petrik, Colleen, Research Assistant Professor
Oceanography
PHD, Massachusetts Institute of Technology, 2011

Petrova, Guergana P, Professor
Mathematics
PHD, University of Southern Carolina, 1999

Pettersson, Martin B, Professor
Philosophy & Humanities
PHD, KTH Royal Institute of Technology, 2003

Pettigrew, Roderic, Professor
College of Medicine
PHD, Massachusetts Institute of Technology, 1977

Peycke, Laura E, Clinical Professor
Vet Small Animal Clinical Sc
DVM, Louisiana State University, 1998

Pham, Lehuyen T, Professor
School of Law
JD, Harvard Law School, 1996

Pharr IV, George M, Professor
Materials Science & Engr
PHD, Stanford University, 1979

Pharr, George, Assistant Professor
Mechanical Engineering
PHD, Harvard University, 2014

Pharr, George, Assistant Professor
Materials Science & Engr
PHD, Harvard University, 2014

Phillips, David M, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, The University of Texas Health Science Center at Houston, 1977

Phillips, Susan T, Professor
School of Law
JD, The Catholic University of America, 1990

Phillips, Timothy D, Distinguished Professor
Vet Integrative Biosciences
PHD, University of Southern Mississippi, 1975

Pho, Victoria B, Clinical Assistant Professor
College of Pharmacy
PHARM D, Texas Southern University, 2008

Pickens, Adam W, Assistant Professor
Industrial & Systems Eng
PHD, Texas Tech University, 2008

Pickens, Adam W, Instructional Assistant Professor
Environmental & Occpnl Hlth
PHD, Texas Tech University, 2008

Pierce, Tanya J, Professor
School of Law
JD, The University of Texas School of Law, 1996

Pierson III, Leland S, Professor
Plant Pathology & Microbiology
PHD, Washington State University, 1986

Pierson, Elizabeth A, Professor
Horticultural Sciences
PHD, Washington State University, 1988

Pietrantonio, Patricia, Professor
Entomology
PHD, University of California, Riverside, 1995

Pillai, Suresh D, Professor
Poultry Science
PHD, University of Arizona, 1989

Pilling, Darrell, Research Assistant Professor
Biology
PHD, University of Birmingham, 1995

Pilsch, Andrew T, Associate Professor
English
PHD, The Pennsylvania State University, 2011

Pina Jr, Manuel, Associate Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1978

Pine, Michelle D, Clinical Associate Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2002
DVM, University of Missouri-Columbia, 1991

Pishko, Elizabeth J, Lecturer
Biochemistry & Biophysics
PHD, University of Texas, 1993

Pisier, Gilles, University Distinguished Professor
Mathematics
PHD, University of Paris, 1977

Pistikopoulos, Efstratios, Professor
Chemical Engineering
PHD, Carnegie Mellon University, 1988

Pittman, Alison F, Clinical Assistant Professor
College of Nursing
PHD, University of Texas at Tyler, 2017

Pittman, Andrew T, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 1991

Plankey Videla, Nancy B, Associate Professor
Sociology
PHD, University of Wisconsin - madison, 1998

Plemons, Jacqueline M, Clinical Professor
Periodontics
DDS, Baylor University College of Dentistry, 1986

Plunk, Michael D, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Baylor College of Dentistry, 1974

Poenitzsch, Nicole L, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
EDD, Texas A&M University, 2013

Pohler, Ky Garrett, Assistant Professor
Animal Science
PHD, University of Missouri, 2015

Poirot, Kristan A, Associate Professor
Communication
PHD, University of Georgia, 2004

Pokrovsky, Valery, University Distinguished Professor
Physics & Astronomy
PHD, Tomsk State University, 1957

Polak, Stephen S, Adjunct Professor
School of Law
LLM, Thomas Jefferson School of Law, 2011

Pollock, Jordan L, Adjunct Professor
School of Law
JD, University of Texas School of Law, 2012

Pollock, Thomas C, Senior Associate Professor
Aerospace Engineering
PHD, University of Virginia, 1977

Polson, James R, Adjunct Assistant Professor
Orthodontics
DDS, The University of Texas Health Science Center at San Antonio, 1986

Poltoratski, Alexei G, Professor
Mathematics
PHD, California Institute of Technology, 1995

Poludnenko, Oleksiy Y, Associate Professor
Aerospace Engineering
PHD, University of Rochester, 2004

Polycarpou, Andreas A, Professor
Mechanical Engineering
PHD, Suny University at Buffalo, 1994

Polymenis, Michael S, Professor
Biochemistry & Biophysics
PHD, Tufts University, 1994

Pond, Amy, Assistant Professor
Political Science
PHD, University of Michigan, 2015

Ponjuan, Luis, Associate Professor
Educ Admn & Human Resource Dev
PHD, University of Michigan, 2005

Ponnamperuma, Krishan, Senior Lecturer
Chemistry
PHD, University of Cambridge, UK, 1992

Pope, Christopher N, University Distinguished Professor
Physics & Astronomy
PHD, University of Cambridge, 1980

Pope, Jeffrey D, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2009

Pope, Michael, Professor
Geology & Geophysics
PHD, Virginia Tech, 1995

Pope, Robert A, Clinical Assistant Professor
College of Medicine
MD, University of Texas Southwestern Medical School, 1992

Popescu, Sorin C, Professor
Ecosystem Science & Mgmt
PHD, Virginia Tech, 2002

Popov, Bojan D, Professor
Mathematics
PHD, University of Southern Carolina, 1999

Porter, Brian F, Clinical Professor
Veterinary Pathobiology
DVM, Texas A&M University, 1992

Porter, Jay R, Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1993

Porter, Weston W, Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1997

Portney, Kent E, Professor
Public Service & Administration
PHD, Florida State University, 1979

Posey, Richard D, Clinical Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1982

Poston Jr, Dudley L, Senior Professor
Sociology
PHD, University of Oregon, 1968

Poston, John W, Professor
Nuclear Engineering
PHD, Georgia Institute of Technology, 1971

Poteet, Brian A, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1991

Potier, Paul A, Professor of the Practice
Marine Engineering Technology
PHD, Prairie View A&M University, 2012

Potter, Henry, Assistant Professor
Oceanography
PHD, University of Miami, 2014

Potvin, Sarah E, Associate Professor
TAMU Libraries
MLS, University of Texas, 2009

Pourahmadi, Mohsen, Professor
Statistics
PHD, Michigan State University, 1980

Powers, David C, Assistant Professor
Chemistry
PHD, Harvard University, 2012

Powers, Tamara M, Lecturer
Chemistry
PHD, Harvard University, 2013

Prasad, Shikha, Assistant Professor
Nuclear Engineering
PHD, University of Michigan, Ann Arbor, 2012

Prats, Lorenzo M, Clinical Associate Professor
Comprehensive Dentistry
DMD, University of Puerto Rico Medical Sciences, 1979

Prechel, Harland N, Professor
Sociology
PHD, University of Kansas, 1986

Preston, Tammie M, Assistant Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2014

Price, Angie H, Associate Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1999

Price, Edwin C, Professor
Agricultural Economics
PHD, University of Kentucky, 1973

Price, Zachary F, Assistant Professor
Performance Studies
PHD, University of California, Santa Barbara, 2013
MFA, New School University, 2004

Pride, William M, Professor
Marketing
PHD, Louisiana State University and A&M College, 1972

Procaccia, Eviatar B, Assistant Professor
Mathematics
PHD, Weizmann Institute of Science, 2013

Prockop, Darwin J, Professor
College of Medicine
PHD, George Washington University, 1961
MD, University of Pennsylvania, 1956

Prout, Erik, Instructional Associate Professor
Geography
PHD, Louisiana State University, 2001

Puckett, Gordie D, Adjunct Professor
School of Law
JD, University of Texas School of Law, 1999

Pulak, Cemalettin M, Professor
Anthropology
PHD, Texas A&M University, 1996

Puller, Steven L, Professor
Economics
PHD, University of California, Berkeley, 2001

Pullium, Cheryl L, Clinical Assistant Professor
College Of Nursing
DNP, The University of Alabama, 2018

Pustay, Michael W, Professor
Management
PHD, Yale University, 1973

Putcha, Rumya S, Assistant Professor
Performance Studies
PHD, University of Chicago, 2011

Puttaiah, Raghunath, Professor
Diagnostic Sciences
DDS, Bapuji Dental College and Hospital, 1983

Pylant III, George D, Adjunct Assistant Professor
Periodontics
DDS, Baylor College of Dentistry, 1988

Qaraqe, Khalid A, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 1997

Qian, Xiaofeng, Assistant Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2008

Qian, Xiaoning, Associate Professor
Electrical & Computer Eng
PHD, Yale University, 2005

Qian, Yongchang, Research Associate Professor
Vet Integrative Biosciences
PHD, Shanghai Institutes for Biological Sciences, 1990

Qin, Chunlin, Professor
Biomedical Sciences
PHD, Okayama University, 1998
DMD, Harbin Medical University, 1983

Qin, Hongmin, Associate Professor
Biology
PHD, Institute of Microbiology, Chinese Academy of Sciences, 1999

Qiu Lin, Instructional Assistant Professor
Foundational Sciences
PHD, University of Alabama, 2006

Qu, Heng, Assistant Professor
Public Service & Administration
PHD, Indiana University Purdue University Indianapolis, 2016

Quadrifoglio, Luca, Associate Professor
Civil & Environmental Engineering
PHD, University of Southern California, 2005

Quek, Francis K, Professor
Computer Science & Engineering
PHD, University of Michigan, 1990

Quek, Francis K, Professor
Visualization
PHD, University of Michigan, 1990

Quick, Christopher M, Associate Professor
Biomedical Engineering
PHD, Rutgers University, 1999

Quick, Christopher M, Professor
Vet Physiology & Pharmacology
PHD, Rutgers University, 1999

Quigg, Antonietta S, Professor
Marine Biology
PHD, Monash University, 2000

Quintana, Maria E, Associate Professor
Hispanic Studies
PHD, University of California, Berkeley, 1998

Quiram, Barbara J, Professor
Health Policy & Management
PHD, Texas A&M University, 1995
MPA, Texas A&M University, 1991

Rackley, Robin A, Clinical Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 2004

Radcliff, Tiffany A, Professor
Health Policy & Management
PHD, School of Public Health University of Minnesota, 2000

Radovic, Miladin, Associate Professor (courtesy appointment)
Mechanical Engineering
PHD, Drexel University, 2001

Radovic, Miladin, Professor
Materials Science & Engr
PHD, Drexel University, 2001

Radzik, Linda C, Professor
Philosophy & Humanities
PHD, The University of Arizona, 1997

Rae, William A, Clinical Professor
Educational Psychology
PHD, University of Texas at Austin, 1975
PHD, University of Texas at Austin, 1975

Rafael, Ruben O, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Technological University of Mexico, 2006

Rafferty, Jonathan P, Lecturer
Chemical Engineering
PHD, Texas A&M University, 2018
PHD, Texas A&M University, 2017

Ragan, Eric D, Assistant Professor
Visualization
PHD, Virginia Tech, 2013

Ragsdale, Daniel J, Professor of the Practice
Computer Science & Engineering
PHD, Texas A&M University, 2001

Ragucci, Sylvie B, Senior Lecturer
International Studies
PHD, The Pennsylvania State University, 1999

Ragusa, Jean C, Professor
Nuclear Engineering
PHD, Institut National Polytechnique de Grenoble, France, 2002

Rahimian, Mina M, Senior Lecturer
Electrical & Computer Eng
PHD, Texas A&M University, 2011

Rahm Jr, Robert S, Instructional Assistant Professor
Mathematics
PHD, Washington University in St. Louis, 2017

Rahman, Mohammad A, Assistant Professor
Texas A&M University at Qatar
PHD, University of Alberta, 2010

Rahman, Shahina, Instructional Assistant Professor
Statistics
PHD, Texas A&M University, 2015

Rahman, Ziyaur, Associate Professor
College of Pharmacy
PHD, Hamdard University, 2005

Rahn, Rhonda N, Clinical Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2014

Raibourn, Delmer D, Adjunct Professor
School of Law
JD, University of Oklahoma School of Law, 1998

Rainey, Robert C, Associate Professor
Political Science
PHD, Florida State University, 2013

Rajagopal, Kumbakonam, Professor
Biomedical Engineering
PHD, University of Minnesota, 1978

Rajagopal, Kumbakonam, University Distinguished Professor
Civil & Environmental Engineering
PHD, University of Minnesota, 1978

Rajagopal, Kumbakonam, University Distinguished Professor
Mechanical Engineering
PHD, University of Minnesota, 1978

Rajan, Nithya, Associate Professor
Soil & Crop Sciences
PHD, Texas Tech University, 2007

Rajendran, Jeyavijayan, Assistant Professor
Electrical & Computer Eng
PHD, New York University, 2015

Rajendran, Praveen, Research Assistant Professor
Institute of Biosciences & Tec
PHD, Birla Institute of Technology and Science, 2006

Ramadan, Hadeel M, Lecturer
Visualization
MFA, Virginia Tech, 2014

Ramadoss, Jayanth, Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2008

Ramanathan, Suresh, Professor
Marketing
PHD, New York University, 2002

Ramasubramanian, Srividya, Professor
Communication
PHD, Pennsylvania State University, 2004

Rambo, Lynne H, Professor
School of Law
JD, The University of Georgia, 1987

Ramer, Svitlana I, Lecturer
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 2014

Ramirez, Gilbert, Professor
Health Policy & Management
DrPH, University of Texas Health Science Center at Houston, 1986

Ramos Garcimartin, Hector, Assistant Lecturer
Educational Psychology
PHD, Texas A&M University, 2015

Ramos, Suzanna J, Assistant Lecturer
Educational Psychology
PHD, Texas A&M University, 2015

Ramsey, W S, Professor
Animal Science
PHD, New Mexico State University, 1996

Randall, Robert E, Professor Emeritus
Ocean Engineering
PHD, University of Rhode Island, 1972

Rangan, Sudarsan, Clinical Associate Professor
Information & Operations Mgmt
PHD, University of Alabama, 2008

Rangel Posada, Juliana, Associate Professor
Entomology
PHD, Cornell University, 2010

Rankin, Kathleen V, Professor
Public Health Sciences
DDS, Baylor College of Dentistry, 1977

Rantschler James, Instructional Assistant Professor
Foundational Sciences
PHD, University of Alabama, 2003

Rao, Asha, Senior Lecturer
Biology
PHD, Texas A&M University, 2002

Rapp, Anita D, Assistant Professor
Atmospheric Sciences
PHD, Colorado State University, 2004

Rapp, Ralf F, Professor
Physics & Astronomy
PHD, Rheinische Friedrich-Wilhelma University, Bonn, 1996

Rasmussen, Bryan P, Professor
Mechanical Engineering
PHD, University of Illinois, 2005

Rathinam, Sivakumar, Associate Professor
Mechanical Engineering
PHD, University of California, Berkeley, 2007

Rauchwerger, Lawrence, Professor
Computer Science & Engineering
PHD, University of Illinois, 1995

Raudsepp, Terje, Professor
Vet Integrative Biosciences
PHD, Swedish University of Agricultural Sciences, 1999

Rauscher, Emily A, Assistant Professor
Communication
PHD, University of Missouri, 2012

Raushel, Frank M, University Distinguished Professor
Chemistry
PHD, University of Wisconsin - madison, 1976

Ravandi, Mohammad Ali, Lecturer
Foundational Sciences
PHD, Mississippi State University, 1984

Raven, Sara P, Assistant Professor
Teaching, Learning & Culture
PHD, University of Georgia, 2013

Ray, Korok, Associate Professor
Accounting
PHD, Standord Graduate School of Business, 2004

Raymond, Anne L, Professor
Geology & Geophysics
PHD, University of Chicago, 1983

Raymond, Dwayne F, Assistant Professor
Philosophy & Humanities
PHD, University of Western Ontario, 2006

Read-Fuller, Andrew M, Clinical Assistant Professor
Oral & Maxillofacial Surgery
MD, UT Southwestern Medical School, 2014
DDS, UCLA, 2011

Rech, Raquel R, Clinical Assistant Professor
Veterinary Pathobiology
PHD, Federal University of Santa Maria (UFSM), 2007
DVM, Santa Catarina State University, 1999

Rector, Amy S, Visiting Assistant Professor
Teaching, Learning & Culture
EDD, University of Cincinnati, 2017

Reddy, Anil K, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Columbia University, 1994

Reddy, Doodipala S, Professor
College of Medicine
PHD, Panjab University, India, 1998

Reddy, Indra K, Professor
College of Pharmacy
PHD, University of Florida, 1989

Reddy, Junuthula, Professor
Materials Science & Engr
PHD, University of Alabama at Huntsville, 1974

Reddy, Junuthula N, University Distinguished Professor
Aerospace Engineering
PHD, University of Alabama at Huntsville, 1974

Reddy, Junuthula N, University Distinguished Professor
Civil & Environmental Engineering
PHD, University of Alabama at Huntsville, 1974

Reddy, Junuthula N, University Distinguished Professor
Mechanical Engineering
PHD, University of Alabama at Huntsville, 1974

Reddy, Likith V, Clinical Professor
Oral & Maxillofacial Surgery
MD, University of Texas Southwestern Medical Center, 2000
DDS, Case Western Reserve University, 1995

Reddy, Sanjay M, Professor
Veterinary Pathobiology
PHD, University of Maryland, College Park, 1994
DVM, Andhra Pradesh Agricultural University, India, 1986

Reddy, Vanita D, Associate Professor
English
PHD, University of California, Davis, 2009

Redwine, Tobin D, Instructional Assistant Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 2014

Reece, Julia S, Assistant Professor
Geology & Geophysics
PHD, University of Texas, 2011

Reece, Robert S, Assistant Professor
Geology & Geophysics
PHD, The University of Texas - Austin, 2012

Reed, David W, Professor
Horticultural Sciences
PHD, Cornell University, 1979

Reed, Helen L, Professor
Aerospace Engineering
PHD, Virginia Tech, 1981

Reese, Roger R, Professor
History
PHD, The University of Texas, 1990

Regan, Annette Karena, Assistant Professor
Epidemiology & Biostatistics
PHD, University of Western Australia, 2016

Regan, Deborah M, Clinical Assistant Professor
Periodontics
DDS, University of Dublin Trinity College, 1982

Regan, Martin P, Associate Professor
Performance Studies
PHD, University of Hawai'i at manoa, 2006

Reid, Russell W, Assistant Professor of the Practice
Land Arch & Urban Planning
MAR, Texas A&M University, 2001

Reihani, Kamran, Instructional Assistant Professor
Mathematics
PHD, Tarbiat Modares University, 2005

Reilly, Peter R, Associate Professor
School of Law
JD, Harvard Law School, 1993

Reiner, David J, Associate Professor
Institute of Biosciences & Tec
PHD, University of Washington, 1996

Reinhart, Gregory D, Professor
Biochemistry & Biophysics
PHD, University of Wisconsin - madison, 1979

Ren, Dingding, Lecturer
Land Arch & Urban Planning
MLA, Texas A&M University, 2018

Rene, Antonio A, Associate Professor
Environmental & Occpnl Hlth
PHD, University of Texas School of Public Health, 1990

Rentzepis, Peter M, Professor
Electrical & Computer Eng
PHD, University of Cambridge, 1963

Resch, Robert P, Associate Professor
History
PHD, University of California Davis, 1985

Retchless, David P, Assistant Professor
Marine Science
PHD, Pennsylvania State University, 2015

Retnanto, Albertus, Professor of the Practice
Texas A&M University at Qatar
PHD, Texas A&M University, 1998

Retteen, Aaron J, Instructional Assistant Professor
School of Law
JD, Florida State University College of Law, 2015

Reuben, Jayne S, Instructional Associate Professor
Biomedical Sciences
PHARMD, Florida A&M University, 2001

Revilla Leon, Marta, Assistant Professor
Comprehensive Dentistry
MSD, University of Washington, 2013
DDS, Universidad AQIfonso X El Sabio, 2009

Reynolds, Larry J, University Distinguished Professor
English
PHD, Duke University, 1974

Reynolds, Mollie M, Senior Lecturer
Biochemistry & Biophysics
PHD, Texas A&M University, 2010

Rhodes, Adrienne C, Assistant Professor
Accounting
PHD, Pennsylvania State University, 2008

Rholes, William S, Professor
Psychological & Brain Sciences
PHD, Princeton University, 1978

Riccio, Cynthia A, Professor
Educational Psychology
PHD, University of Georgia, 1993

Rice, Mitchell F, Professor
Political Science
PHD, Claremont Graduate School, 1976

Rice, Sarah C, Associate Professor
Accounting
PHD, The Ohio State University, 2007

Rich, Elisabeth, Associate Professor
International Studies
PHD, University of Michigan Ann Arbor, 1985

Rich, Lisa A, Instructional Associate Professor
School of Law
JD, American University, 1998

Richard, Jacques C, Senior Lecturer
Aerospace Engineering
PHD, Rensselaer University, 1989

Richard, Jacques C, Senior Lecturer
College of Engineering
PHD, Rensselaer University, 1989

Richards, Amanda, Lecturer
Vet Small Animal Clinical Sc
DVM, Colorado State University, 2016

Richardson, Mary J, Senior Professor
Oceanography
PHD, Massachusetts Institute of Technology, 1980

Richmond, Daniel J, Lecturer
Recreation, Park & Tourism Sc
PHD, University of Utah, 2016

Ridley, Charles R, Professor
Educational Psychology
PHD, University of Minnesota, 1978

Riechman, Steven E, Associate Professor
Health & Kinesiology
PHD, University of Pittsburgh, 2000

Riegg, Stephen B, Assistant Professor
History
PHD, The University of North Carolina at Chapel Hill, 2016

Riggs, Eric A, Associate Professor
Geology & Geophysics
PHD, University of California-Riverside, 2000

Riggs, Penny K, Associate Professor
Animal Science
PHD, Texas A&M University, 1996

Righetti, Raffaella, Associate Professor
Electrical & Computer Eng
PHD, University of Houston, 2005

Rijnkels, Monique G, Research Assistant Professor
Vet Integrative Biosciences
PHD, Leiden University, 1997

Riley, Bruce B, Professor
Biology
PHD, University of Wisconsin - madison, 1990

Riley, David G, Professor
Animal Science
PHD, Texas A&M University, 2000

Rimer, Mendell, Associate Professor
College of Medicine
PHD, University of Maryland at Baltimore, 1993

Rising, Hope Hui, Assistant Professor
Land Arch & Urban Planning
PHD, University of Oregon, 2015
MLA, University of Michigan, 2000

Riskowski, Gerald L, Professor
Biological & Agricultural Eng
PHD, Iowa State University, 1986

Rister, M E, Professor
Agricultural Economics
PHD, Michigan State University, 1981

Ritchey, Philip C, Instructional Assistant Professor
Computer Science & Engineering
PHD, Purdue University, 2015

Ritter, Nicola L, Instructional Assistant Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 2014

Rivera, Gonzalo M, Associate Professor
Veterinary Pathobiology
PHD, Cornell University, 2002
DVM, National University of Rio Cuarto, Argentina, 1988

Rivera, Hector H, Associate Professor
Educational Psychology
PHD, University of California-Santa Cruz, 2001

Roark, Erin B, Associate Professor
Geography
PHD, University of California, Berkeley, 2005

Robbins, Andrew B, Visiting Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2018

Roberman Susan, Clinical Assistant Professor
College of Medicine
MD, The University of Texas Medical Branch at Galveston, 1990
MD, University of Texas Medical Branch, 1990

Roberts, Andrea R, Assistant Professor
Land Arch & Urban Planning
PHD, University of Texas - Austin, 2016

Robertson, John D, Professor
Political Science
PHD, University of Illinois at Urbana - Champaign, 1979

Robichau, Robbie, Assistant Professor
Public Service & Administration
PHD, Arizona State University, 2013

Robinson, Elizabeth K, Instructional Professor
English
PHD, Texas A&M University, 1995

Robinson, John R, Professor
Accounting
PHD, University of Michigan, 1981
JD, University of Michigan, 1979

Robinson, Sally A, Associate Professor
English
PHD, University of Washington, 1989

Roblyer, Dwight A, Lecturer
Political Science
PHD, Texas A&M University, 2009

Roblyer, Kathleen A, Clinical Assistant Professor
College of Nursing
DNP, The University of Alabama at Birmingham, 2015

Rodgers, William S, Clinical Professor
Construction Science
JD, Texas Tech University, 1978

Rodiek, Jon, Professor
Land Arch & Urban Planning
PHD, University of Massachusetts, Amherst, 1974
MLA, University of Massachusetts, 1968

Rodiek, Susan D, Associate Professor
Architecture
PHD, Cardiff University, 2004

Rodrigues De Paula Lima, Heitor, Professor of the Practice
Petroleum Engineering
PHD, Texas A&M University, 1998

Rodrigues Hoffmann, Aline, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2011

Rodriguez, Ignacio J, Distinguished Professor
Civil & Environmental Engineering
PHD, Colorado State University, 1967

Rodriguez, Ignacio J, University Distinguished Professor
Ocean Engineering
PHD, Colorado State University, 1967

Rodriguez, Natalia, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Georgia, 2015

Roelke, Daniel L, Professor
Wildlife & Fisheries Sciences
PHD, Texas A&M University, 1997

Rogachev, Grigory V, Professor and Head
Physics & Astronomy
PHD, National Research Centre, 1999

Rogers, George O, Professor
Land Arch & Urban Planning
PHD, University of Pittsburgh, 1983

Rogers, James R, Associate Professor
Political Science
PHD, The University of Iowa, 1994

Rogers, James R, Associate Professor
Texas A&M University at Qatar
PHD, The University of Iowa, 1994

Rogers, Julia S, Senior Lecturer
Architecture
PHD, Texas A&M University, 1996

Rogers, Kenita S, Professor
Vet Small Animal Clinical Sc
DVM, Louisiana State University, 1982

Rogers, William E, Professor
Ecosystem Science & Mgmt
PHD, Kansas State University, 1998

Rogers, William J, Lecturer
Chemical Engineering
PHD, Ohio State University, 1976

Rogovskyy, Artem S, Assistant Professor
Veterinary Pathobiology
PHD, Washington State University, 2014
DVM, National Agricultural University, 2001

Rojas, Joseph M, Professor
Computer Science & Engineering
PHD, University of California, Berkeley, 1995

Rojas, Joseph M, Professor
Mathematics
PHD, University of California, Berkeley, 1995

Rold, Michael F, Lecturer
Communication
PHD, Louisiana State University, 2014

Rollins, John W, Lecturer
George Bush School of Govern
JD, American University, 2001

Romano, Juan E, Professor
Vet Large Animal Clinical Sc
PHD, Texas A&M University, 2004
DVM, Universidad del Uruguay, 1985

Rooker, Jay R, Professor
Marine Biology
PHD, The University of Texas - Austin, 1997

Rooney, William L, Professor
Soil & Crop Sciences
PHD, University of Minnesota, 1992

Roque-Sol, Marco A, Lecturer
Mathematics
PHD, Texas A&M University, 2006

Rosenheim, James M, Professor
History
PHD, Princeton University, 1981

Rosenthal, Adam R, Assistant Professor
International Studies
PHD, Emory University, 2014

Rosenthal, Gil G, Professor
Biology
PHD, University of Texas at Austin, 2000

Ross Jr, Joseph H, Professor
Materials Science & Engr
PHD, University of Illinois at Urbana-Champaign, 1986

Ross Jr, Joseph H, Professor
Physics & Astronomy
PHD, University of Illinois at Urbana-Champaign, 1986

Ross, Andrew L, Professor
International Affairs
PHD, Cornell University, 1984

Ross, Shawna M, Assistant Professor
English
PHD, The Pennsylvania State University, 2011

Ross-Wootton, Ashley D, Assistant Professor
Marine Science
PHD, Texas A&M University, 2010

Rossi, Marco, Assistant Professor
Finance
PHD, Pennsylvania State University, 2010

Rossmann, Jeffrey A, Clinical Professor
Periodontics
DDS, University of Minnesota - Twin Cities, 1972

Rosson, Claude, Sr. Professor
Agricultural Economics
PHD, Texas A&M University, 1982

Rosynek, Michael P, Professor
Chemistry
PHD, Rice University, 1972

Roth, Augusta D, Associate Professor of the Practice
Maritime Transportation
DBA, Walden University, 2018

Rothman Stoler, Andrea, Clinical Associate Professor
Comprehensive Dentistry
DDS, Texas A&M College of Dentistry, 1991

Rouleau, Brian J, Associate Professor
History
PHD, University of Pennsylvania, 2010

Roumell, Elizabeth A, Assistant Professor
Educ Admn & Human Resource Dev
PHD, University of Wyoming, 2009

Roussel, Allen J, Professor
Vet Large Animal Clinical Sc
DVM, Louisiana State University, 1977

Rowe, Gilbert T, Senior Professor
Marine Biology
PHD, Duke University, 1968

Rowell, Charles H, Professor
English
PHD, Ohio State University, 1972

Rowell, Eric C, Professor
Mathematics
PHD, University of California, San Diego, 2003

Rowlett, Kristen M, Instructional Assistant Professor
School of Law
JD, Louisiana State University Law Center, 2013

Rozier, James T, Lecturer
English
PHD, University of Mississippi, 2015

Rudd, Leeann M, Instructional Associate Professor
Texas A&M University at Qatar
PHD, Indiana State University, 2012

Ruest, Louisbruno, Associate Professor
Biomedical Sciences
PHD, McGill University, Montreal, Canada, 2002

Ruimi, Annie, Associate Professor
Texas A&M University at Qatar
PHD, University of California at Santa Barbara, 2005

Rundell, William, Professor
Mathematics
PHD, Glasgow University, 1974

Ruoff, Lynn M, Clinical Professor
Vet Integrative Biosciences
DVM, Colorado State University, 1975

Rupley, William H, Professor
Teaching, Learning & Culture
PHD, University of Illinois at Urbana-Champaign, 1975

Russell Jr, Billy D, Distinguished Professor
Electrical & Computer Eng
PHD, University of Oklahoma, 1975

Russell, Brooke H, Research Assistant Professor
Institute of Biosciences & Tec
PHD, Texas A&M University System Health Sciences Center, 2008

Russell, David H, Professor
Chemistry
PHD, University of Nebraska - Lincoln, 1978

Russell, Gul A, Professor
College of Medicine
PHD, Indiana University, 1962

Russell, Karen E, Professor
Veterinary Pathobiology
PHD, North Carolina State University, 1997
DVM, Virginia Tech, 1990

Russell, Lauren A, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Atlantic Veterinary College, 2014

Russell, Richard, Lecturer
George Bush School of Govern
PHD, University of Virginia, 1997

Rusyn, Ivan I, Professor
Vet Integrative Biosciences
PHD, University of North Carolina at Chapel Hill, 2000

Rutherford, Tracy A, Professor
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1998

Rutkowski, Joseph, Assistant Professor
College of Medicine
PHD, Ecole Polytechnique Federale de Lausanne, France, 2008

Rutkowski, Joseph M, Assistant Professor
College of Medicine
PHD, Ecole Polytechnique Federale de Lausanne, France, 2008

Rutter, Christine R, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Mississippi State University, 2003

Ruyle, Leslie E, Lecturer
International Affairs
PHD, University of Georgia, 2012

Ryan, James G, Professor
Liberal Studies
PHD, University of Notre Dame, 1981

Ryan, Kathryn J, Instructional Assistant Professor
Biology
PHD, Baylor College of Medicine, 1998

Rybowski, Zofia K, Associate Professor
Construction Science
PHD, University of California - Berkeley, 2009
MAR, Harvard University, 1991

Rye, Chavela M, Senior Lecturer
Biochemistry & Biophysics
PHD, MIT, 2014

Rye, Hays S, Associate Professor
Biochemistry & Biophysics
PHD, University of California-Berkeley, 1995

Ryoo, Boong Y, Associate Professor
Construction Science
PHD, University of Wisconsin - madison, 1995

Ryu, Seok Chang, Assistant Professor
Mechanical Engineering
PHD, Stanford University, 2013

SIMMS, MICHELLE L, Lecturer
College of Liberal Arts
MFA, Regent University, 2015
PHD, Texas A&M University, 2011

Sabat, Isaac E, Assistant Professor
Psychological & Brain Sciences
PHD, George Mason University, 2016

Saber, Mohamed, Lecturer
Chemistry
PHD, Texas A & M University, 2013

Sabrsula Jr, Irvin F, Clinical Assistant Professor
College of Medicine
MD, The University of Texas Health Science Center at Houston, 1978

Sacchetti, James C, Professor
Biochemistry & Biophysics
PHD, Washington University in St. Louis, 1987

Sachs, Matthew S, Professor
Biology
PHD, Massachusetts Institute of Technology, 1986

Sadr, Reza, Associate Professor
Texas A&M University at Qatar
PHD, University of Utah, 2002

Safe, Stephen H, University Distinguished Professor
Vet Physiology & Pharmacology
PHD, University of Oxford, 1966

Safonov, Alexei N, Professor
Physics & Astronomy
PHD, University of Florida, 2001

Sagapuram, Dinakar, Assistant Professor
Industrial & Systems Eng
PHD, Purdue University, 2013

Sakamoto, Arthur, Professor
Sociology
PHD, University of Wisconsin - Madison, 1988

Sakhaei Far, Maryam S, Assistant Professor
Civil & Environmental Engineering
PHD, North Carolina State University, 2011

Salama, Ghada H, Instructional Associate Professor
Texas A&M University at Qatar
PHD, Cairo University, 2001

Salin, Victoria S, Professor
Agricultural Economics
PHD, Purdue University, 1996

Salter, Phia S, Associate Professor
Psychological & Brain Sciences
PHD, University of Kansas, 2010

Sampson, Sarah N, Clinical Assistant Professor
Vet Large Animal Clinical Sc
PHD, Washington State University, 2008
DVM, Washington State University, 1999

Samuel, James E, Professor
College of Medicine
PHD, Washington State University, 1986

Samuel, Nephthys G, Clinical Assistant Professor
College of Pharmacy
PHARM D, Texas A&M Irma Lerma Rangel College of Pharmacy, 2014

San Pedro, Joanna Maria N, Lecturer
Chemistry
PHD, Johns Hopkins University, 2014

Sanandres, Luis A, Professor
Mechanical Engineering
PHD, Texas A&M University, 1985

Sanchez Castilla, Marcelo Javier, Professor
Civil & Environmental Engineering
PHD, Universidad Politecnica de Catalunya (UPC), Barcelona, Spain, 2004

Sanchez-Sinencio, Edgar, Distinguished Professor
Electrical & Computer Eng
PHD, University of Illinois, 1973

Sanders, James O, Professor
Animal Science
PHD, Texas A&M University, 1977

Sanders, Joan T, Senior Lecturer
Accounting
MS, Texas A&M University, 1990

Sandlin, Judy R, Clinical Associate Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1993

Sandlin, Michael E, Clinical Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 1992

Sang, Huiyan, Associate Professor
Statistics
PHD, Duke University, 2008

Sanger, Neil, Lecturer
Atmospheric Sciences
PHD, Naval Postgraduate School, CA, 2014

Sansom, Garrett T, Research Assistant Professor
Environmental & Occpnl Hlth
DrPH, Texas A&M University, 2016

Sansom, Roger B, Associate Professor
Philosophy & Humanities
PHD, University of North Carolina at Chapel Hill, 2002

Santander, Patricio J, Senior Lecturer
Chemistry
PHD, Texas A&M University, 1987

Santos, Adolfo, Professor
Political Science
PHD, University of Houston, 1998

Santos, Rose Anna, Adjunct Assistant Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 2013

Santschi, Peter H, Professor
Marine Science
PHD, Universitat Bern, 1975

Saravanan, Ramalingam, Professor
Atmospheric Sciences
PHD, Princeton University, 1990

Saric, William S, University Distinguished Professor
Aerospace Engineering
PHD, Illinois Institute of Technology, 1968

Sarin, Vivek, Associate Professor
Computer Science & Engineering
PHD, University of Illinois, 1997

Saripalli, Srikanth, Associate Professor
Mechanical Engineering
PHD, University of Southern California, 2007

Sasangohar, Farzan, Assistant Professor
Industrial & Systems Eng
PHD, University of Toronto, 2015

Saslow, Wayne M, Professor
Physics & Astronomy
PHD, University of California - Irvine, 1968

Satterfield, Michael C, Associate Professor
Animal Science
PHD, Texas A&M University, 2008

Saunders, Ashley B, Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 2001

Saunders, William B, Associate Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 2005
DVM, Texas A&M University, 2001

Savari, Serap A, Associate Professor
Electrical & Computer Eng
PHD, Massachusetts Inst of Technology, 1996

Savell, Jeffrey W, Distinguished Professor
Animal Science
PHD, Texas A&M University, 1978

Sawyer, Jason E, Associate Professor
Animal Science
PHD, New Mexico State University, 2000

Scallan, Elizabeth M, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Ross University School of Veterinary Medicine, 2007

Schade, Gunnar W, Associate Professor
Atmospheric Sciences
PHD, Johannes Gutenberg Universitat, Germany, 1997

Schaefer, Amber J, Instructional Assistant Professor
Chemistry
PHD, Rice University, 2007

Schaefer, Scott D, Professor
Computer Science & Engineering
PHD, Rice University, 2006

Schapiro, Michelle A, Assistant Professor
College of Medicine
PHD, University of New England, 1998

Schartl, Manfred, Visiting Professor
Biology
PHD, University of Gießen, 1980

Schechter, David S, Professor
Petroleum Engineering
PHD, Brisol University, United Kingdom, 1989

Scheiner, Justin J, Assistant Professor and Extension Viticulture
Specialist
Horticultural Sciences
PHD, Cornell University, 2010

Schielack Jr, Vincent, Associate Professor
Mathematics
PHD, University of Texas at Austin, 1982

Schlegel, Rebecca J, Associate Professor
Psychological & Brain Sciences
PHD, University of Missouri - Columbia, 2009

Schloss, Rebecca H, Associate Professor
History
PHD, Duke University, 2003

Schlumprecht, Thomas B, Professor
Mathematics
PHD, Ludwig Maximilians Universitat, Germany, 1988

Schmeichel, Brandon J, Professor
Psychological & Brain Sciences
PHD, Florida State University, 2005

Schmiediche, Henrik, Instructional Associate Professor
Statistics
PHD, Texas A&M University, 1993

Schmit, Cason D, Assistant Professor
Health Policy & Management
JD, Arizona State University, 2012

Schmitz, David G, Visiting Associate Professor
Vet Large Animal Clinical Sc
DVM, Kansas State University, 1976

Schmitz, Katrina L, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, St. George's University, 2016

Schneiderman, Emet D, Professor
Biomedical Sciences
PHD, University of Michigan - Ann Arbor, 1985

Schobeiri, Taher M, Senior Professor
Mechanical Engineering
PHD, Technische Universitat Darmstadt, Germany, 1979

Schoessow, Courtney J, Instructional Assistant Professor
Health & Kinesiology
PHD, Medical University of South Carolina, 2014

Scholthof, Herman B, Professor
Plant Pathology & Microbiology
PHD, University of Kentucky, 1990

Scholthof, Karenbeth G, Professor
Plant Pathology & Microbiology
PHD, University of Kentucky, 1989

Scholtz, John M, Professor
Molecular & Cellular Medicine
PHD, University of California, Berkeley, 1989

Schroeder, Friedhelm, Senior Professor
Vet Physiology & Pharmacology
PHD, Michigan State University, 1974
PHD, Michigan State University, 1970

Schubert, Jerome J, Associate Professor
Petroleum Engineering
PHD, Texas A&M University, 1999

Schuessler, Hans A, Professor
Physics & Astronomy
DOC, Universitat Heidelberg, 1964

Schuessler, John M, Associate Professor
International Affairs
PHD, The University of Chicago, 2007

Schuett, Michael A, Instructional Professor
Recreation, Park & Tourism Sc
PHD, University of Illinois at Urbana - Champaign, 1991

Schuld, Dawna L, Assistant Professor
Visualization
PHD, The University of Chicago, 2009

Schuller, Michael J, Instructional Associate Professor
Texas A&M University at Qatar
DEN, Texas A&M University, 1985

Schulman, Craig T, Associate Professor of the Practice
Economics
PHD, Texas A&M University, 1990

Schulze, Anja, Associate Professor
Marine Biology
PHD, University of Victoria, Canada, 2001

Schumacher, Courtney, Professor
Atmospheric Sciences
PHD, University of Washington, 2003

Schumacher, Jay S, Lecturer
Psychological & Brain Sciences
PHD, Texas A&M University, 1999

Schwab, Arthur P, Professor
Soil & Crop Sciences
PHD, Colorado State University, 1981

Schwartz, Daniel L, Associate Professor
History
PHD, Princeton University, 2009

Schwartz, Mark, Executive Professor
Management
JD, Baylor University School of Law, 1983

Schwarz, John R, Senior Professor
Marine Biology
PHD, Rensselaer Polytechnic Institute, 1972

Schweikert, Emile A, Professor
Chemistry
PHD, Universite de Paris, France, 1964

Schweitzer, Jordan L, Clinical Associate Professor
Endodontics
DDS, Baylor College of Dentistry, 1986

Schwemer, Lee C, Adjunct Professor
School of Law
JD, Texas Tech University School of Law, 1972

Scott, David, Professor
Recreation, Park & Tourism Sc
PHD, Pennsylvania State University, 1990

Scott, Erin M, Assistant Professor
Vet Small Animal Clinical Sc
DVM, University of Pennsylvania, 2015

Scott, Harvey M, Professor
Veterinary Pathobiology
PHD, University of Guelph, 1998
DVM, University of Saskatchewan, 1988

Scott, Timothy P, Professor
Biology
PHD, Texas A&M University, 1996

Scully, Marlan O, University Distinguished Professor
Aerospace Engineering
PHD, Yale University, 1966

Scully, Marlan O, Professor (courtesy appointment)
Mechanical Engineering
PHD, Yale University, 1966

Scully, Marlan O, University Distinguished Professor
Physics & Astronomy
PHD, Yale University, 1966

Sczepanski, Jonathan T, Assistant Professor
Chemistry
PHD, The Johns Hopkins University, 2010

Seabury, Christopher M, Associate Professor
Veterinary Pathobiology
PHD, Texas A&M University, 2004

Searcy, Stephen W, Senior Professor
Biological & Agricultural Eng
PHD, Oklahoma State University, 1980

Sears, Nicholas, Instructional Assistant Professor
College of Engineering
PHD, Texas A&M University, 2017

Seaworth Angela, Lecturer
George Bush School of Govern
PHD, Indiana University, 2016

Seekri, Renu B, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1996

Seers, Thomas D, Assistant Professor
Texas A&M University at Qatar
PHD, University of Manchester, 2016

Seipp, Adam R, Professor
History
PHD, University of North Carolina at Chapel Hill, 2005

Sekaran, Aarthi, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2012

Sell, Jane A, Professor
Sociology
PHD, Washington State University, 1979

Selva Valero, Daniel, Assistant Professor
Aerospace Engineering
PHD, Massachusetts Institute of Technology, 2012

Seminario, Jorge M, Professor
Chemical Engineering
PHD, Southern Illinois University Carbondale, 1987

Seminario, Jorge M, Professor
Materials Science & Engr
PHD, Southern Illinois University Carbondale, 1987

Sen, Arun, Professor
Information & Operations Mgmt
PHD, Pennsylvania State University, 1979

Sen, Ravi, Associate Professor
Information & Operations Mgmt
PHD, University of Illinois at Urbana - Champaign, 2003

Senarath Dharmasena, Kalu A, Instructional Assistant Professor
Agricultural Economics
PHD, Texas A&M University, 2010

Sengupta, Sinjini, Senior Lecturer
Mathematics
PHD, Florida State University, 2006

Seo, Anna H, Adjunct Assistant Professor
Pediatric Dentistry
DDS, University of Michigan - Ann Arbor, 1991

Seo, Heewon, Research Assistant Professor
Vet Integrative Biosciences
PHD, Yonsei University, 2012

Seo, Jinsil, Associate Professor
Visualization
PHD, Simon Fraser University, 2011
MFA, School of Visual Arts, 2004

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Soil & Crop Sciences
PHD, Cornell University, 2002

Serpedin, Erchin, Professor
Electrical & Computer Eng
PHD, University of Virginia, 1999

Serpedin, Erchin, Professor
Texas A&M University at Qatar
PHD, University of Virginia, 1999

Serrano, Catherine M, Lecturer
Chemistry
PHD, University of Utah, 2015

Sewell, Robin R, Associate Professor
TAMU Libraries
PHD, Washington State University, 1986

Seymore, Malinda L, Professor
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JD, Baylor University, 1986

Sezgin, Ergin, Professor
Physics & Astronomy
PHD, State University of New York at Stony Brook, 1980

Shafer, C S, Professor
Recreation, Park & Tourism Sc
PHD, Clemson University, 1993

Shafron, Emily, Assistant Professor
Accounting
PHD, The University of Georgia, 2019

Shahrampour, Shahin, Assistant Professor
Industrial & Systems Eng
PHD, University of Pennsylvania, 2015

Shahrashoob, Zahra, Lecturer
Chemical Engineering
PHD, University of Oklahoma, 2018

Shakkottai, Srinivas G, Associate Professor
Electrical & Computer Eng
PHD, University of Illinois, 2007

Shamberger, Kathryn E, Assistant Professor
Oceanography
PHD, University of Washington, 2011

Shamberger, Patrick J, Assistant Professor
Materials Science & Engr
PHD, University of Washington, 2010

Shan, Libo, Professor
Plant Pathology & Microbiology
PHD, Kansas State University, 2003

Shandley, Robert R, Professor
International Studies
PHD, University of Minnesota, Twin Cities, 1996

Shankar, Venkatesh, Professor
Marketing
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Shannon, Joe, Adjunct Professor
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Shao, Lin, Professor
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Shao, Lin, Professor
Nuclear Engineering
PHD, University of Houston, 2001

Shapiro, Lee, Associate Professor
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PHD, State University of New York at Stony Brook, 2004

Sharkey, Joseph R, Professor
Hlth Promotion & Comm Hlth Sci
PHD, University of North Carolina - Chapel Hill, 2002

Sharma, Amalesh, Assistant Professor
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PHD, Georgia State University, 2017

Sharma, Virender K, Professor
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Sharon, Guni, Assistant Professor
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PHD, Ben-Gurion University, 2015

Sharp, Nathan Y, Professor
Accounting
PHD, University of Texas, 2007

Sharpe, Bradley, Lecturer
Finance
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Shatalov, Oksana, Instructional Associate Professor
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Shaub, Michael K, Clinical Professor
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Shaw, Brian D, Professor
Plant Pathology & Microbiology
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Shaw, Robert B, Senior Professor
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Shaw, Timothy A, Lecturer
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Shaw, William D, Professor
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Shcherbakova, Anastasia V, Assistant Professor
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Shebl, Mamdouh A, Research Professor
Geology & Geophysics
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Sheldon, Matthew T, Assistant Professor
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PHD, University of California, Berkeley, 2010

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Computer Science & Engineering
PHD, University of Southern California, 2008

Shen, Yang, Assistant Professor
Electrical & Computer Eng
PHD, Boston University, 2008

Sheridan, Daniel J, Professor
College of Nursing
PHD, Oregon Health Sciences University, 1998

Sherman, Ledric D, Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2013

Shetty, Ashok K, Professor
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PHD, All India Institute of Medical Sciences, 1990

Shetty, Bala, Professor
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PHD, Southern Methodist University, 1985

Shi, Liheng, Research Assistant Professor
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PHD, Osaka University, 2001

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Mathematics
PHD, University of Rochester, 2018

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PHD, University of Illinois, 1992

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Civil & Environmental Engineering
PHD, National Mineral Resources University, 2005
PHD, National Mineral Resources University, Russia, 2005

Shim, Won-Bo, Professor
Plant Pathology & Microbiology
PHD, Purdue University, 2000

Shimek, Christina M, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2012

Shipley, Meagan M, Clinical Assistant Professor
Health & Kinesiology
PHD, Indiana University, 2014

Shipman III, Frank M, Professor
Computer Science & Engineering
PHD, University of Colorado, 1993

Shippen, Dorothy E, Professor
Biochemistry & Biophysics
PHD, University of Alabama at Birmingham, 1987

Shiralkar, Reena Kuba, Adjunct Assistant Professor
Pediatric Dentistry
DDS, Texas A&M University Baylor College of Dentistry, 2004

Shiu, Anne J, Assistant Professor
Mathematics
PHD, University of California at Berkeley, 2010

Short, Aric K, Professor
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JD, University of Texas Law School, 1996

Shryock, Kristi J, Associate Professor of Instruction
Aerospace Engineering
PHD, Texas A&M University, 2011

Shukla, Keshawa P, Professor of the Practice
College of Engineering
PHD, Banaras Hindu University, 1979

Sicilio, Mark S, Clinical Assistant Professor
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Sideris, Petros, Assistant Professor
Civil & Environmental Engineering
PHD, University of Buffalo, State University of New York, 2012

Siegele, Deborah A, Associate Professor
Biology
PHD, University of Wisconsin - madison, 1989

Sievert, Ronald J, Associate Professor of the Practice
International Affairs
JD, The University of Texas - Austin, 1977

Silva-Martinez, Jose E, Professor
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Silvy, Nova J, Professor
Wildlife & Fisheries Sciences
PHD, Southern Illinois University, 1975

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Simmons, Krystal T, Clinical Associate Professor
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PHD, Texas A&M University, 2009

Simon, Bradley T, Assistant Professor
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PHD, Texas A&M University, 2005

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PHD, Texas A&M University, 1992

Singer, John N, Associate Professor
Health & Kinesiology
PHD, Ohio State University, 2002

Singh, Chanan, Professor
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Singh, Vijay P, Distinguished Professor
Biological & Agricultural Eng
PHD, Colorado State University, 1974

Singleton, Daniel A, Professor
Chemistry
PHD, University of Minnesota, 1986

Singleton, Julie A, Clinical Assistant Professor
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PHD, Texas A&M University, 2011

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Sinha, Samiran, Professor
Statistics
PHD, University of Florida, 2004

Sirovic, Ana, Associate Professor
Marine Biology
PHD, University of California San Diego, 2006

Sisman, Ozlem, Visiting Assistant Professor
Liberal Studies
PHD, Bilkent University, Turkey, 2013

Sitcheran, Raquel M, Associate Professor
College of Medicine
PHD, University of California, San Francisco, 2000

Sivakumar, Natarajan, Associate Professor
Mathematics
PHD, University of Alberta, 1990

Skaggs, Chris L, Professor
Animal Science
PHD, Iowa State University, 1992

Skare, Jon T, Professor
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PHD, Washington State University, 1992

Skeie, David R, Assistant Professor
Finance
PHD, Princeton, 2004

Skelton, Robert E, Professor
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Skelton, Robert E, TEES Eminent Professor
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PHD, University of California, 1976

Skow, Loren C, Senior Professor
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Slattery Jr, George P, Professor
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Slattery, Jeff W, Instructional Associate Professor
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Slotman, Michel A, Associate Professor
Entomology
PHD, Yale University, 2003

Slowey, Niall C, Professor
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Smallman, Rachel E, Assistant Professor
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Visualization
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Smith, Bryan N, Assistant Lecturer
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Smith, Donald R, Senior Associate Professor
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Smith, Gary C, Visiting Professor
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Smith, James, Lecturer
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Smith, James L, Associate Professor
Biology
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Smith, Jason M, Instructional Assistant Professor
Political Science
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Smith, Jonathan, Professor
Geography
PHD, Syracuse University, 1991

Smith, Karen S, Clinical Associate Professor
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EDD, Sam Houston State University, 2000

Smith, Laura N, Assistant Professor
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PHD, George Mason University, 2008

Smith, Lauren, Clinical Assistant Professor
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DVM, Texas A&M University, 2013

Smith, Leann, Assistant Professor
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PHD, University of Texas at Austin, 2017

Smith, Matthew L, Associate Professor
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PHD, Texas A&M University, 2008

Smith, Patricia K, Professor
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PHD, North Carolina State University, 2000

Smith, Philip M, Instructional Associate Professor
History
PHD, Texas A&M University, 2007

Smith, Rachel J, Assistant Professor
Psychological & Brain Sciences
PHD, University of Pennsylvania, 2008

Smith, Roger R, Professor
Mathematics
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Smith, Sonny, Lecturer
George Bush School of Govern
PHD, Virginia Tech, 2009

Smith, Stephen B, Professor
Animal Science
PHD, University of California, Davis, 1980

Smith, Steven M, Professor
Psychological & Brain Sciences
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Smith, William E, Assistant Lecturer
Recreation, Park & Tourism Sc
PHD, Texas A&M University, 2012

Smotherman, Michael S, Professor
Biology
PHD, University of California, Los Angeles, 1998

Snider, Erin A, Assistant Professor
International Affairs
PHD, University of Cambridge, Trinity College, 2011

Snyder, Douglas K, Professor
Psychological & Brain Sciences
PHD, University of North Carolina at Chapel Hill, 1978

Snyder, Franklin G, Professor
School of Law
JD, University of Missouri - Columbia, 1983

Sobol, Neil L, Professor
School of Law
JD, Southern Methodist University, 1988

Socolofsky, Scott A, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 2001

Sohn McCormick, Anita, Adjunct Assistant Professor
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PHD, Texas A&M University, 2000

Sohrabji, Farida, Professor
College of Medicine
PHD, University of Rochester, 1991

Sokolov, Alexei V, Professor
Physics & Astronomy
PHD, Stanford University, 2001

Solomon, Gary B, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1976

Son, Dong H, Professor
Chemistry
PHD, University of Texas at Austin, 2002

Sones, Amerian D, Clinical Assistant Professor
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DMD, Tufts University, 1979

Song, Dezhen, Professor
Computer Science & Engineering
PHD, University of California, Berkeley, 2004

Song, Fang, Assistant Professor
Computer Science & Engineering
PHD, Penn State, 2013

Song, Hojun, Associate Professor
Entomology
PHD, The Ohio State University Columbus, OH, 2006

Song, Jianxun, Professor
College of Medicine
PHD, Third Military Medical University, 1998

Song, Xingyong, Assistant Professor
Eng Tech & Ind Distribution
PHD, University of Minnesota, Twin Cities, 2011

Song, Xingyong, Assistant Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Minnesota, Twin Cities, 2011

Song, Youn K, Research Assistant Professor
Ocean Engineering
PHD, Texas A&M University, 2013

Sorescu, Alina, Professor
Marketing
PHD, University of Houston, 2002

Sorescu, Sorin M, Professor
Finance
PHD, University of Florida, 1996

Sorg, Joseph A, Associate Professor
Biology
PHD, University of Chicago, 2006

Sottile, Frank J, Professor
Mathematics
PHD, University of Chicago, 1994

Sowell, Jesse Horton, Assistant Professor
International Affairs
PHD, Massachusetts Institute of Technology, 2015

Spalink, Angenette Marie, Assistant Professor
Performance Studies
PHD, Bowling Green State University, 2014

Spalink, Daniel, Assistant Professor
Ecosystem Science & Mgmt
PHD, University of Wisconsin-Madison, 2015

Sparks, David W, Professor
Geology & Geophysics
PHD, Brown University, 1992

Spath, Jeffrey B, Professor
Petroleum Engineering
PHD, Mining University of Leoben, Austria, 1996

Spaulding, Kathy A, Visiting Lecturer
College of Veterinary Medicine
DVM, Purdue University, 1976

Speer, Aline G, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Dental School of Caruaru-PE, Brazil, 2005

Spence, Alicia M, Clinical Assistant Professor
Comprehensive Dentistry
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Spence, Joseph W, Adjunct Professor
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JD, Baylor Law School, 1983

Spengler, John O, Professor
Hlth Promotion & Comm Hlth Sci
PHD, Indiana University, 1999

Spiegelman, Clifford H, University Distinguished Professor
Statistics
PHD, Northwestern University, 1976

Springfield III, Henry C, Professor of Practice
Agricultural Economics
PHD, Texas A&M University, 2008

Sprintson, Alexander, Professor
Electrical & Computer Eng
PHD, Israel Institute of Technology, 2003

Spurlock II, Joe C, Senior Professor
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JD, The University of Texas School of Law, 1962

Sreenivasan, Akshaya, Clinical Assistant Professor
Marketing
PHD, The Pennsylvania State University, 2016

Sreenivasan, Katepalli R, Visiting Professor
College of Engineering
PHD, Indian Institute of Science, 1975

Sridhar, Shrihari, Associate Professor
Marketing
PHD, University of Missouri-Columbia, 2009

Srinivasa, Arun, Professor
Texas A&M University at Qatar
PHD, University of California, Berkeley, 1991

Srinivasa, Arun R, Professor
Mechanical Engineering
PHD, University of California, Berkeley, 1991

Srinivasan, Raghavan, Professor
Ecosystem Science & Mgmt
PHD, Purdue University, 1992

Srinivasan, Rahul, Assistant Professor
College of Medicine
PHD, University of Pittsburgh, 2006

Sriskandarajah, Chelliah, Professor
Information & Operations Mgmt
PHD, L'Institut National Polytechnique de Grenoble, 1986

Srivastava, Ankit, Assistant Professor
Materials Science & Engr
PHD, University of North Texas, 2013

Staack, David A, Associate Professor
Mechanical Engineering
PHD, Drexel University, 2008

Stabile, Susan M, Associate Professor
English
PHD, University of Delaware, 1997

Stackhouse, Elizabeth Wood, Lecturer
Educational Psychology
PHD, Texas A&M University, 2018

Stagner, Brian H, Clinical Professor
Psychological & Brain Sciences
PHD, University of Massachusetts Amherst, 1982

Stallone, John N, Professor
Vet Physiology & Pharmacology
PHD, University of Arizona, 1984

Stanley, Christine A, Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1990

Starman, Terri W, Professor
Horticultural Sciences
PHD, Texas A&M University, 1986

Stasi, Selina M, Instructional Assistant Professor
Hlth Promotion & Comm Hlth Sci
PHD, Texas A&M University, 2018

Stasny, Mary A, Senior Lecturer
Accounting
PHD, Texas A&M University, 2010

Stauffer, Jon M, Assistant Professor
Information & Operations Mgmt
PHD, Indiana University, Kelley School of Business, 2016

Steele, Robert S, Clinical Assistant Professor
College of Medicine
MD, Michigan State University, 1992

Steglich, Alan L, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1986

Steichen, Jamie L, Lecturer
Marine Biology
PHD, Texas A&M University, 2012

Steiner, Joerg M, Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 2000

Stelly, David M, Professor
Soil & Crop Sciences
PHD, University of Wisconsin - madison, 1983

Stenberg, William V, Clinical Assistant Professor
Periodontics
DDS, Northeastern State University of Oklahoma, 2012

Stephan, Clifford C, Research Associate Professor
Institute of Biosciences & Tec
PHD, Vanderbilt University, 1988

Stephens Jr, Claude R, Adjunct Assistant Professor
Orthodontics
DDS, Texas A&M University, 1981

Stephens Jr, Marvin G, Adjunct Assistant Professor
Orthodontics
DDS, Baylor College of Dentistry, 1971

Stephenson, Michael, Professor
Communication
PHD, University of Kentucky, 1999

Sterman, Allyson A, Veterinary Resident
Vet Small Animal Clinical Sc
DVM, The Ohio State University, 2015

Stevens, Mark L, Clinical Assistant Professor
College of Medicine
MD, University of Texas Health Science Center, 1990

Stevens, Reid, Assistant Professor
Agricultural Economics
PHD, University of California - Berkeley, 2015

Stewart, Paul B, Lecturer
Teaching, Learning & Culture
PHD, University of Southern California, 2003

Stewart, Randolph H, Clinical Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1997
DVM, Texas A&M University, 1983

Stewart, Zachary D, Assistant Professor
Architecture
PHD, Columbia University, 2015

Stickney, Mark J, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1997

Stiller, Peter F, Professor
Mathematics
PHD, Princeton University, 1977

Stillisano, Jacqueline G, Lecturer
Teaching, Learning & Culture
EDD, Ball State University, 2004

Stinson, Crystal P, Assistant Professor
Comprehensive Dentistry
DDS, Texas A&M University, 2014

Stoenescu, Livia, Instructional Associate Professor
Visualization
PHD, Queen's University, 2010

Stoessel, Achim, Associate Professor
Oceanography
DOC, Universitat Hamburg, 1990

Stoica, Gheorghe, Professor
Biomedical Engineering
PHD, Michigan State University, 1984
DVM, Institute of Agronomy, Yassy, Romania, 1966

Stoleru, Radu, Associate Professor
Computer Science & Engineering
PHD, University of Virginia, 2007

Stooksberry, John R, Clinical Assistant Professor
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DDS, Baylor College of Dentistry, 1998

Stough, Laura M, Associate Professor
Educational Psychology
PHD, University of Texas, 1993

Stover, Patrick, Professor
Biochemistry & Biophysics
PHD, Virginia Commonwealth University, 1990

Straight, Paul D, Associate Professor
Biochemistry & Biophysics
PHD, University of Colorado, 2000

Stranges, Anthony N, Associate Professor
History
PHD, University of Wisconsin - madison, 1977

Straube, Emil J, Professor
Mathematics
PHD, Swiss Federal Institute of Technology Zurich, 1983

Strawser, Jerry R, Professor
Accounting
PHD, Texas A&M University, 1985

Strawser, Robert H, Professor
Accounting
DOC, University of Maryland, 1969

Street Jr, Richard L, Professor
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PHD, The University of Texas at Austin, 1980

Strganac, Thomas W, Professor
Aerospace Engineering
PHD, Virginia Tech, 1987

Strickland, Jack, Adjunct Professor
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JD, The University of Texas School of Law, 1971

Strigari, Louis E, Assistant Professor
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PHD, Ohio State University, 2005

Strong Jr, Robert L, Associate Professor
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Strong, Jennifer R, Associate Professor
Ag Leadership, Educ & Comm
PHD, Oklahoma State University, 2007

Strong, Michelle R, Instructional Assistant Professor
Health & Kinesiology
MFA, Case Western Reserve University, 2011

Stronza, Amanda L, Associate Professor
Recreation, Park & Tourism Sc
PHD, University of Florida, 2000

Strouboulis, Theofanis, Professor
Aerospace Engineering
PHD, University of Texas - Austin, 1986

Struminger, Rhonda S, Assistant Professor of the Practice
Ecosystem Science & Mgmt
PHD, Texas A&M University, 2013

Stuber, Sarah, Assistant Professor
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PHD, Michigan State University, 2019

Su, Hung-Jue, TEES Research Professor (courtesy appointment)
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PHD, University of Michigan - Ann Arbor, 1988

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PHD, University of Michigan - Ann Arbor, 1988

Subashchandrabose, Sargurunathan, Assistant Professor
Veterinary Pathobiology
PHD, Michigan State University, 2011
BVSc, Madras Veterinary College Tamil Nadu Veterinary and Animal
Sciences University, 2005

Subbarao, Suhasini T, Professor
Statistics
PHD, University of Bristol, 2001

Subramanian, Rahul, Lecturer
Ocean Engineering
PHD, University of Michigan, 2012

Suchodolski, Jan, Associate Professor
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PHD, Texas A&M University, 2005

Sudderth, Bonnie, Adjunct Professor
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JD, The University of Texas School of Law, 1985

Sudduth, Albert S, Adjunct Professor
School of Law
JD, Catholic University of America, 1989

Sueda, Shinjiro, Assistant Professor
Computer Science & Engineering
PHD, University of British Columbia, 2010

Suen Ching-Yun, Professor
Foundational Sciences
PHD, University of Houston, 1983

Suermann, Patrick C, Associate Professor
Construction Science
PHD, University of Florida, 2009

Suess Raeisinafchi, Courtney, Assistant Professor
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PHD, University of Nevada, Las Vegas, 2014

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Sukhishvili, Svetlana A, Professor
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PHD, Lomonosov Moscow State University, 1989

Sule, Preeti, Research Assistant Professor
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PHD, North Dakota State University, 2011

Sullivan Jr, Harry W, Executive Professor
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Sullivan, Ronald D, Lecturer
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JD, University of Kansas, 2014

Sumpter, Randall S, Associate Professor
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PHD, University of Texas, 1996

Sun, Deqiang, Assistant Professor
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Sun, Qing, Assistant Professor
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PHD, University of Delaware, 2010

Sun, Yanlong, Research Assistant Professor
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PHD, Bowling Green State University, 2002

Sun, Yuefeng, Professor
Geology & Geophysics
PHD, Columbia University, 1994

Sun, Yuefeng, Professor
Petroleum Engineering
PHD, Columbia University, 1994

Sun, Yuxiang, Associate Professor
Nutrition & Food Science
PHD, University of Manitoba, 2000

Suntzeff, Nicholas B, University Distinguished Professor
Physics & Astronomy
PHD, University of California - Santa Cruz, 1980

Suva, Larry J, Professor & Department Head
Vet Physiology & Pharmacology
PHD, The University of Melbourne, 1992

Suzuki, Kazuko, Associate Professor
Sociology
PHD, Princeton University, 2003

Svoboda, Kathy K, Professor
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PHD, University of Nebraska Medical Center, 1982

Swanson, Edward P, Professor
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PHD, University of Wisconsin, 1977

Sweany, Noelle W, Clinical Associate Professor
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Sweet, Kristi, Associate Professor
Philosophy & Humanities
PHD, Loyola University, Chicago, 2006

Sweetman, John A, Professor
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PHD, Stanford University, 2001

Swim Jr, Keith D, Clinical Associate Professor
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JD, Texas Tech University, 1980

Sword, Gregory A, Professor
Entomology
PHD, University of Texas at Austin, 1998

Swords, Stephanie B, Adjunct Assistant Professor
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DDS, The University of Texas Health Science Center at San Antonio, 2011

Sylvan, Jason B, Assistant Professor
Oceanography
PHD, Rutgers University, 2008

Sze, Sing, Associate Professor
Biochemistry & Biophysics
PHD, University of Southern California, 2000

Sze, Sing H, Associate Professor
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PHD, University of Southern California, 2000

Szunyogh, Istvan, Professor
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PHD, Hungarian Academy of Sciences, 1994

Tabaar, Mohammad A, Associate Professor
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PHD, Georgetown University, 2012

Tadlock, Larry P, Clinical Associate Professor
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Tafreshi, Reza, Associate Professor
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PHD, University of British Columbia, Canada, 2005

Tag, Andrew G, Senior Lecturer
Biology
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Tahmasbi Arashlow, Mehrnaz, Clinical Assistant Professor
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DDS, University of Colorado, 2016
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Tai, Li-Jung, Assistant Professor
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Talcott, Stephen T, Professor
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Talebpour, Alireza, Assistant Professor
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Taleghani Esfahani, Mohsen, Clinical Professor
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Taliaferro, Steven D, Associate Professor
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Talreja, Ramesh R, Professor
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Tamamis, Phanourios, Assistant Professor
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Tamborindéguy, Cecilia, Associate Professor
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PHD, Institut National Polytechnique de Toulouse, 2004

Tanaka, Mamoru, Clinical Assistant Professor
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Tang, Lu, Associate Professor
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Tang, Xiaoxian, Visiting Assistant Professor
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Tanur, Eduardo, Adjunct Assistant Professor
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Tao, Feng, Associate Professor
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Tarar, Ahmer S, Associate Professor
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Tarone, Aaron M, Associate Professor
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Tarvin, David T, Lecturer
Communication
PHD, Louisiana State University, 2013

Tassinary, Louis G, Professor
Visualization
JD, Boston College, 2003
PHD, Dartmouth College, 1984

Tate, James Michael, Assistant Professor
Architecture
MAR, Yale University, 2007

Tayce, Jordan D, Instructional Assistant Professor
Vet Integrative Biosciences
DVM, Texas A&M University, 2008

Taylor IV, Thad, Adjunct Assistant Professor
Oral & Maxillofacial Surgery
DDS, Howard University, 1994

Taylor, Kenneth A, Assistant Professor of the Practice
Public Service & Administration
PHD, Our Lady of the Lake University, 2017

Taylor, Lathrop, Senior Lecturer
Biology
PHD, Texas A&M University, 1985

Taylor, Lori L, Professor
Public Service & Administration
PHD, University of Rochester, 1990

Taylor, Michelle M, Professor
Political Science
PHD, Rice University, 1990

Taylor, Nicholas J, Assistant Professor
Epidemiology & Biostatistics
PHD, University of North Carolina, 2014

Taylor, Reginald W, Associate Professor
Orthodontics
DMD, Harvard School of Dental Medicine, 1992

Taylor, Robert J, Research Professor
Vet Integrative Biosciences
PHD, Texas A&M University, 1987

Taylor, Thomas M, Associate Professor
Animal Science
PHD, University of Tennessee, Knoxville, 2006

Tchakerian, Vatche P, Professor
Geography
PHD, UCLA, 1989

Teal, Michael, Assistant Professor of the Practice
Land Arch & Urban Planning
MLA, Texas A&M University, 1996

Tebeaux, William J, Executive Professor
Finance
MBA, University of Houston, 1971

Tedeschi, Luis O, Professor
Animal Science
PHD, Cornell University, 2001

Teel, Pete D, Professor
Entomology
PHD, Oklahoma State University, 1978

Teizer, Winfried, Associate Professor
Materials Science & Engr
PHD, University of Massachusetts - Amherst, 1998

Teizer, Winfried, Professor
Physics & Astronomy
PHD, University of Massachusetts - Amherst, 1998

Telafici, Michael A, Instructional Associate Professor
Texas A&M University at Qatar
PHD, Norwich University, 2009

Teller, Lori Massin, Clinical Associate Professor
Vet Small Animal Clinical Sc
DVM, Texas A&M University, 1990

Templin, Mai Phuong L, Instructional Assistant Professor
Health & Kinesiology
MAR, University of Houston, 1992

Ten Have, Gabriella A, Research Assistant Professor
Health & Kinesiology
PHD, Maastricht University, 2017

Teodoro, Manuel P, Associate Professor
Political Science
PHD, University of Michigan-Ann Arbor, 2007

Tesh, Vernon L, Professor
College of Medicine
PHD, Emory University, 1988

Tessendorf, Jerry, Visiting Professor
Visualization
PHD, Brown University, 1984

Tevis, Noah A, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2007

Thakar, Heather B, Assistant Professor
Anthropology
PHD, University of California Santa Barbara, 2014

Thangavel Samikkannu, Associate Professor
College of Pharmacy
PHD, University of Madras, 1997

Thomas, Andre, Assistant Professor of the Practice
Visualization
MFA, Laguna College of Art & Design, 2017

Thomas, Deborah J, Professor
Oceanography
PHD, University of North Carolina at Chapel Hill, 2002

Thomas, Edwin L, Visiting Professor
Materials Science & Engr
PHD, Cornell, 2018

Thomas, Francis E, Instructional Professor
Health & Kinesiology
PHD, Texas A&M University, 1980

Thomas, Sarah Jane, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, The Ohio State University College of Veterinary Medicine, 2015

Thomas, Shawna L, TEES Assistant Research Scientist
Computer Science & Engineering
PHD, Texas A&M University, 2010

Thomas, Terry L, Professor
Biology
PHD, The University of Georgia, 1975

Thomasson, John A, Professor
Biological & Agricultural Eng
PHD, University of Kentucky, 1997

Thompson, Christopher G, Assistant Professor
Educational Psychology
PHD, Florida State University, 2016

Thompson, Courtney M, Assistant Professor
Geography
PHD, University of Idaho, 2017

Thompson, James A, Professor
Vet Large Animal Clinical Sc
DVM, University of Guelph, 1982

Thompson, Julie L, Assistant Professor
Educational Psychology
PHD, University of North Carolina at Charlotte, 2014

Thompson, Wesley J, Professor
Biology
PHD, University of California-Berkeley, 1975

Thoms, Alston V, Professor
Anthropology
PHD, Washington State University, 1989

Thomson, Michael J, Professor
Soil & Crop Sciences
PHD, Cornell University, 2002

Thornton, Daniel C, Professor
Oceanography
DOC, Queen Mary Westfield College, University of London, 1996

Thornton, John H, Executive Professor
Health & Kinesiology
PHD, Texas A&M University, 1997

Thornton, Michael A, Clinical Assistant Professor
Health & Kinesiology
EDD, Texas A&M University, 2007

Thornton, Patricia H, Professor
Sociology
PHD, Stanford University, 1993

Threadgill, David, Professor
Biochemistry & Biophysics
PHD, Texas A&M University, 1989

Threadgill, David, Distinguished Professor
College of Medicine
PHD, Texas A&M University, 1989

Threadgill, David W, Professor
Veterinary Pathobiology
PHD, Texas A&M University, 1989

Threadgill, Deborah, Research Assistant Professor
College of Medicine
PHD, Texas A&M University, 1990

Thyng, Kristen M, Research Assistant Professor
Oceanography
PHD, University of Washington, 2012

Tian, Chao, Associate Professor
Electrical & Computer Eng
PHD, Cornell University, 2005

Tian, Guoqiang, Professor
Economics
PHD, University of Minnesota, Twin Cities, 1987

Tian, Limei, Assistant Professor
Biomedical Engineering
PHD, Washington University in St. Louis, 2014

Tian, Yanan, Associate Professor
Vet Physiology & Pharmacology
PHD, Rutgers University, 1993

Tice, Michael M, Associate Research Scientist
Geology & Geophysics
PHD, Stanford University, 2006

Tichenor, Nathan R, Research Assistant Professor
Aerospace Engineering
PHD, Texas A&M University, 2010

Tiffany-Castiglioni, E, Professor
Vet Integrative Biosciences
PHD, University of Texas Medical Branch at Galveston, 1979

Tihanyi, Laszlo, Professor
Management
PHD, Indiana University - Bloomington, 1996

Timothe, Peggy, Assistant Professor
Public Health Sciences
MPH, Harvard T.H. Chan School of Public Health, 2002

Tipton, Nadene J, Adjunct Assistant Professor
Orthodontics
DDS, Texas A&M University Baylor College of Dentistry, 1992

Tirunelveli, Srividhya, Professor
School of Law
DJS, George Washington University School of Law, 2008
LLM, King's College, University of London, 1995

Tisone, Christine, Clinical Assistant Professor
Health & Kinesiology
PHD, Indiana University, 2004

Titi, Edriss S, Professor
Mathematics
PHD, Indiana University, Bloomington, 1986

Toback, David, Professor
Physics & Astronomy
PHD, University of Chicago, 1997

Todd, Dorothy R, Lecturer
English
PHD, University of Georgia, 2017

Tolbert, Mary K, Clinical Associate Professor
Vet Small Animal Clinical Sc
PHD, North Carolina State University, 2013
DVM, University of Georgia, 2006

Toliat, Hamid A, Professor
Electrical & Computer Eng
PHD, University of Wisconsin - madison, 1991

Tolson, Homer, Senior Professor
Educ Admn & Human Resource Dev
PHD, Purdue University, 1968

Tomaszewski, Lesley E, Instructional Assistant Professor
Health Policy & Management
PHD, Texas A&M University, 2003

Tomaszewski, Michael A, Visiting Professor
Animal Science
PHD, North Carolina State University, 1972

Tomberlin, Jeffery K, Professor
Entomology
PHD, University of Georgia, 2001

Tong, Carl, Associate Professor
College of Medicine
MD, Texas A&M University Health Science Center, 2002
PHD, Texas A&M University Health Science Center, 2002

Tong, Carl W, Associate Professor
College of Medicine
MD, Texas A&M University Health Science Center, 2002
PHD, Texas A&M University Health Science Center, 2002

Tong, Fuhui, Professor
Educational Psychology
PHD, Texas A&M University, 2006

Torabi, Katayoun, Instructional Assistant Professor
English
PHD, Texas A&M University, 2018

Torres, Mario S, Professor
Educ Admn & Human Resource Dev
PHD, Pennsylvania State University, 2003

Torrez, Betsy D, Lecturer
Geology & Geophysics
PHD, University of Alabama, 1994

Toso De Araujo, Andre Luis, Clinical Assistant Professor
Information & Operations Mgmt
PHD, The University of Oklahoma, 2004

Traber, Daniel S, Professor
Liberal Studies
PHD, University of Houston, 2000

Trache, Andreea, Associate Professor
Biomedical Engineering
PHD, Institute of Atomic Physics, Romania, 1996

Trache, Andreea, Associate Professor
College of Medicine
PHD, Institute of Atomic Physics, Romania, 1996

Trache, Andreea, Associate Professor
College of Medicine
PHD, Institute of Atomic Physics, Romania, 1996

Tracy, John C, Professor
Civil & Environmental Engineering
PHD, University of California Davis, 1989

Tran, Kim-Vy H, Professor
Physics & Astronomy
PHD, University of California, Santa Cruz, 2002

Tran, Nghi T, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, University of Texas Health Science Center at San Antonio, 2012

Tribble, Robert E, University Distinguished Professor
Physics & Astronomy
PHD, Princeton University, 1973

Triplett, Robert G, Clinical Professor
Oral & Maxillofacial Surgery
DDS, Loyola University, 1963

Tripp, Andrew Reed, Assistant Professor
Architecture
PHD, University of Pennsylvania, 2017

Tropina, Albina, Research Professor
Aerospace Engineering
PHD, Kyiv Aviation University, 2011
PHD, V.N. Karazin Kharkiv National University, 2000

Troy, Alesia C, Clinical Professor
Marketing
PHD, Texas A&M University, 1997

Trujillo, Elizabeth I, Professor
School of Law
JD, University of Houston Law Center, 1999

Trusko, Brett E, Research Assistant Professor
College of Medicine
DBA, Golden State University, 2002

Trzeciakowski, Jerome, Professor
College of Medicine
PHD, University of Florida, 2015

Trzeciakowski, Jerome, Professor
College of Medicine
PHD, University of Florida, 2015

Tsai, Robert Y, Associate Professor
Institute of Biosciences & Tec
PHD, John Hopkins University School of Medicine, 1996

Tse, Senyo Y, Professor
Accounting
PHD, University of California - Berkeley, 1983

Tsenn, Joanna N, Instructional Assistant Professor
Mechanical Engineering
PHD, Texas A&M University, 2016

Tsvetkov, Pavel V, Associate Professor
Nuclear Engineering
PHD, Texas A&M University, 2002

Tsvetkova, Galina V, Lecturer
Nuclear Engineering
PHD, Texas A&M University, 2003

Tucker, Harvey J, Professor Emeritus
Political Science
PHD, Indiana University, 1977

Tucker-Drob, Robin D, Assistant Professor
Mathematics
PHD, California Institute of Technology, 2013

Tuhkanen, Mikko J, Associate Professor
English
PHD, University at Buffalo, 2005

Tunnell, John C, Adjunct Assistant Professor
Periodontics
DDS, Baylor College of Dentistry, 2016

Tuo, Rui, Assistant Professor
Industrial & Systems Eng
PHD, Chinese Academy of Sciences, 2013

Turner, Kenneth E, Lab Instructor
Veterinary Pathobiology
DVM, University of Pennsylvania, 1992

Tyagi, Aakash, Professor of the Practice
Computer Science & Engineering
PHD, University of Louisiana, 1993

Tzortzakis, Stylianos, Professor
Texas A&M University at Qatar
PHD, Ecole Polytechnique, France, 2001

Ugaz, Victor M, Professor
Biomedical Engineering
PHD, Northwestern University, 1999

Umorin, Mikhail P, Instructional Assistant Professor
Biomedical Sciences
PHD, Baylor University, 2006

Unterman, Katherine R, Associate Professor
History
PHD, Yale University, 2011

Ura, Joseph D, Associate Professor
Political Science
PHD, University of North Carolina Chapel Hill, 2006

Ureta, Manuelita, Associate Professor
Economics
PHD, UCLA, 1987

Utterback, Virginia A, Associate Professor
College of Nursing
PHD, Texas Tech University, 2010

Vadali, Srinivas R, Professor
Aerospace Engineering
PHD, Virginia Tech, 1983

Vaddiraju, Sreeram, Associate Professor
Chemical Engineering
PHD, University of Louisville, 2006

Vaddiraju, Sreeram, Associate Professor
Materials Science & Engr
PHD, University of Louisville, 2006

Vaghetto, Rodolfo, Research Assistant Professor
Nuclear Engineering
PHD, Texas A&M University, 2013

Vahdat Zad, Vahid, Visiting Lecturer
Architecture
PHD, Texas A&M University, 2014

Vaid, Jyotsna, Professor
Psychological & Brain Sciences
PHD, McGill University, 1982

Valant, John R, Adjunct Assistant Professor
Orthodontics
DDS, Loyola University, Chicago, 1979

Valasek, John L, Professor
Aerospace Engineering
PHD, University of Kansas, 1995

Valderrama, Maria D, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, Pontificia Universidad Javeriana, Columbia, 1988

Valdez Flores, Ciriaco, Professor of the Practice
Industrial & Systems Eng
PHD, Texas A&M University, 1987

Vales, Maria Isabel, Associate Professor
Horticultural Sciences
PHD, University of Vigo, Spain, 1996

Vallone, Jessica M, Clinical Assistant Professor
Vet Large Animal Clinical Sc
DVM, Mississippi State University, 2012

Vallone, Lucien V, Clinical Assistant Professor
Vet Small Animal Clinical Sc
DVM, Mississippi State University, 2011

Van De Logt, Martinus J, Associate Professor
Texas A&M University at Qatar
PHD, Oklahoma State University, 2002

Van Hengstum, Peter J, Assistant Professor
Marine Science
PHD, Dalhousie University, Canada, 2011

Van Zandt, Shannon S, Professor
Land Arch & Urban Planning
PHD, University of North Carolina at Chapel Hill, 2004

Vanegas, Jorge A, Professor
Architecture
PHD, Stanford University, 1988

Vannest, Kimberly J, Professor
Educational Psychology
PHD, Louisiana State University, 2000

Varadarajan, Poondi, University Distinguished Professor
Marketing
PHD, University of Massachusetts Amherst, 1979

Varanasi, Venu G, Assistant Professor
Biomedical Sciences
DEN, University of Florida Gainesville, 2004

Varghese, Adel, Instructional Associate Professor
Economics
PHD, University of Pennsylvania, 1996

Vargo, Edward L, Professor
Entomology
PHD, University of Georgia, Athens, 1986

Varner, Dickson D, Professor
Vet Large Animal Clinical Sc
DVM, University of Missouri, 1978

Varner, Gary E, Professor
Philosophy & Humanities
PHD, University of Wisconsin - madison, 1988

Varni, James Walter, Research Professor
Land Arch & Urban Planning
PHD, University of California, Los Angeles, 1976

Vasilakis, Apostolos, Instructional Associate Professor
English
PHD, Emory University, 2004

Vassar, William, Adjunct Professor
School of Law
JD, University of Oklahoma School of Law, 2002

Vaught, David J, Professor
History
PHD, University of California, Davis, 1997

Vechan, Ryan J, Assistant Professor of the Practice
Maritime Transportation
JD, University of Houston, 2014

Vechot, Luc N, Associate Professor
Texas A&M University at Qatar
PHD, Ecole Nationale Supérieure des Mines de Saint Etienne, France, 2007

Vedenov, Dmitry, Associate Professor
Agricultural Economics
PHD, Ohio State University, 2001

Vedlitz, Arnold, Professor
Public Service & Administration
PHD, University of Houston, 1975

Vela, Carmen G, Clinical Assistant Professor
College of Nursing
DNP, American Sentinel University, 2018

Veldman, Joseph W, Assistant Professor
Ecosystem Science & Mgmt
PHD, University of Florida, 2010

Veldman, Robin, Assistant Professor
College of Liberal Arts
PHD, University of Florida, 2018
PHD, University of Florida, 2014

Velez, Rodrigo A, Associate Professor
Economics
PHD, University of Rochester, 2009

Vemulapalli, Ramesh, Professor
Veterinary Pathobiology
PHD, University of Maryland, 1996
BVSc, Andhra Pradesh Agricultural University, India, 1986

Vemulapalli, Tracy H, Clinical Associate Professor
Veterinary Pathobiology
DVM, Virginia-Maryland Regional College of Veterinary Medicine, 1998

Venkatraj, Vijayanagaram S, Clinical Associate Professor
Vet Integrative Biosciences
PHD, New York University, 1992

Ventura, Emanuele, Visiting Assistant Professor
Mathematics
PHD, Aalto University, 2017

Verduzco Jr, Rene A, Clinical Assistant Professor
College of Pharmacy
PHARM.D, The University of Texas Health Science Center at Houston,
2011

Verma, Suzanne N, Instructional Assistant Professor
Oral & Maxillofacial Surgery
MMS, University of Illinois at Chicago, 2001

Versaw, Wayne K, Professor
Biology
PHD, University of Wisconsin - madison, 1995

Vess, Matthew K, Associate Professor
Psychological & Brain Sciences
PHD, University of Missouri, 2010

Vieira-De-Castro, Luis, Professor
Anthropology
PHD, Texas A&M University, 2001

Vilaros, Teresa M, Professor
Hispanic Studies
PHD, University of Georgia, 1989

Villalobos, Jose P, Associate Professor
Hispanic Studies
PHD, University of California Irvine, 1998

Villareal, Samuel S, Senior Lecturer
Electrical & Computer Eng
PHD, Texas A&M University, 1999

Vina, Stephen R, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2001

Vinayak, Fnu, Assistant Professor
Mechanical Engineering
PHD, Purdue University, 2016

Viruru, Radhika, Clinical Professor
Teaching, Learning & Culture
PHD, Texas A&M University, 1998

Viser, Victor J, Instructional Associate Professor
Liberal Studies
PHD, Temple University, 1995

Vishnubhakat, Saurabh, Associate Professor
School of Law
JD, University of New Hampshire School of Law, 2010
LLM, University of New Hampshire School of Law, 2010

Vitale, Karla S, Clinical Assistant Professor
College of Medicine
DO, Midwestern University, 2001

Voelker, Gary A, Professor
Wildlife & Fisheries Sciences
PHD, University of Washington, 1998

Voges Gariepy, Andra-Kay, Clinical Associate Professor
Vet Large Animal Clinical Sc
DVM, Texas A&M University, 1991

Volcic, Jurij, Visiting Assistant Professor
Mathematics
PHD, University of Auckland, 2018

Von Gillern, Sam R, Clinical Assistant Professor
Teaching, Learning & Culture
PHD, Iowa State University, 2017

Von Vacano, Diego A, Associate Professor
Political Science
PHD, Princeton University, 2003

Voneiff, George W, Professor of the Practice
Petroleum Engineering
MS, Texas A&M University, 1992

Vorobets, Mariya, Instructional Assistant Professor
Mathematics
PHD, Lviv National University, 2004

Vorobets, Yaroslav, Associate Professor
Mathematics
PHD, Moscow Lomonosov State University, 1998

Waas, Jack R, Senior Lecturer
Chemistry
PHD, University of Michigan, 1997

Wachsmann, Shelley A, Professor
Anthropology
PHD, Institute of Archaeology, Hebrew University, 1991

Wade, Terry L,
College of Geosciences
JD, University of Rhode Island, 1978

Wakefield, Karen J, Instructional Assistant Professor
College of Medicine
PHD, Texas A&M University, 2014

Walewski, John A, Associate Professor of the Practice
Civil & Environmental Engineering
PHD, University of Texas, 2005

Walichowski, Miranda F, Clinical Associate Professor
Educational Psychology
PHD, Texas A&M University, 2009

Walker, Dillon K, Research Assistant Professor
Health & Kinesiology
PHD, Kansas State University, 2008

Walker, Duncan M, Professor
Computer Science & Engineering
PHD, Carnegie Mellon University, 1986

Walker, Matthew B, Associate Professor
Health & Kinesiology
PHD, Florida State University, 2007

Wallace, David Shane, Lecturer
Liberal Studies
PHD, Louisiana State University, 2011

Wallace, William D, Adjunct Professor
School of Law
JD, Texas Wesleyan University School of Law, 2009

Wallis, Cara J, Associate Professor
Communication
PHD, University of Southern California, 2008

Walsh, Jonelle L, Assistant Professor
Physics & Astronomy
PHD, University of California, Irvine, 2011

Waltemyer, David S, Clinical Assistant Professor
Health & Kinesiology
PHD, Texas A&M University, 2006

Walzem, Rosemary L, Professor
Poultry Science
PHD, University of California, Davis, 1987

Wang, Dechun, Professor
Accounting
PHD, University of Missouri - Columbia, 2004

Wang, Fen, Professor
Institute of Biosciences & Tec
PHD, Clarkson University, 1994

Wang, Fengming, Clinical Assistant Professor
Endodontics
PHD, West China College of Stomatology, 2006

Wang, Hongbin, Professor
College of Medicine
PHD, Ohio State University, 1998

Wang, Jia, Professor
Educ Admn & Human Resource Dev
PHD, University of Georgia, 2004

Wang, Jun, Research Assistant Professor
Biomedical Sciences
DDS, Sichuan University, 2016

Wang, Jun, Assistant Professor
College of Medicine
PHD, Shanghai Institutes for Biological Sciences, 1999

Wang, Jun, Assistant Professor
Recreation, Park & Tourism Sc
PHD, Colorado State University, 2013

Wang, Jyhwen, Professor
Eng Tech & Ind Distribution
PHD, Northwestern University, 1991

Wang, Jyhwen, Professor (courtesy appointment)
Mechanical Engineering
PHD, Northwestern University, 1991

Wang, Jyhwen, Professor
Materials Science & Engr
PHD, Northwestern University, 1991

Wang, Lifan, Professor
Physics & Astronomy
PHD, University of Science and Technology of China, 1993

Wang, Ping, Assistant Professor
Maritime Business Administration
PHD, The Ohio State University, 2007

Wang, Qian, Associate Professor
Biomedical Sciences
PHD, Chinese Academy of Sciences, 1998

Wang, Shiren, Associate Professor
Industrial & Systems Eng
PHD, Florida State University, 2006

Wang, Shiren, Associate Professor
Materials Science & Engr
PHD, Florida State University, 2006

Wang, Suojin, Professor
Statistics
PHD, University of Texas at Austin, 1988

Wang, Wen-Yao, Associate Professor
Maritime Business Administration
PHD, Texas A&M University, 2008

Wang, Xiaofang, Assistant Professor
Biomedical Sciences
DDS, Fourth Military Medical University, China, 2003

Wang, Xiubin B, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Irvine, 2001

Wang, Xuan, Instructional Assistant Professor
College of Science
PHD, Texas A&M University, College Station, TX, 2016

Wang, Ya, Associate Professor
Mechanical Engineering
PHD, Virginia Tech, 2012

Wang, Yen J, Instructional Assistant Professor
Industrial & Systems Eng
DEN, Northwestern University, 1991

Wang, Yuhe, Assistant Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2013

Wang, Zhangyang, Assistant Professor
Computer Science & Engineering
PHD, University of Illinois at Urbana-Champaign, 2016

Ward Ober, Elizabeth S, Research Professor
College of Medicine
PHD, University of Cambridge, 1986
PHD, University of Cambridge, 1985

Ward, Joseph D, Professor
Mathematics
PHD, Indiana University, 1973

Ward, Ronald G, Senior Lecturer
Computer Science & Engineering
PHD, Texas A&M University, 1973

Warden, Robert R, Professor
Architecture
MAR, Texas A&M University, 1986

Ware, Michael L, Adjunct Professor
School of Law
JD, University of Houston Law Center, 1983

Warren, Warren P, Instructional Assistant Professor
Sociology
PHD, Texas A&M University, 2008

Warren, Gina S., Visiting Associate Professor
School of Law
JD, Rutgers School of Law, 2004

Warren, Nancy B, Professor
English
PHD, Indiana University, 1997

Washburn, David J, Assistant Professor
Health Policy & Management
PHD, Harvard T.H. Chan School of Public Health, 2011

Washburn, Kevin E, Professor
Vet Large Animal Clinical Sc
DVM, Oklahoma State University, 1993

Washburn, Shannon E, Clinical Associate Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 2010
DVM, Texas A&M University, 1994

Washington, Karen R, Adjunct Professor
School of Law
JD, University of Texas at Austin, 1984

Wasser, Jeremy S, Associate Professor
Vet Physiology & Pharmacology
PHD, Indiana University, 1985

Watanabe, Coran M, Associate Professor
Chemistry
PHD, John Hopkins University, 1999

Waters, Michael R, Distinguished Professor
Anthropology
PHD, The University of Arizona, 1980

Waterworth, Leonard D, Executive Professor
Maritime Business Administration
MS, US Army War College, 2000

Watkins, Jeffrey P, Professor
Vet Large Animal Clinical Sc
DVM, Kansas State University, 1980

Watson, Karan L, Senior Professor
Electrical & Computer Eng
PHD, Texas Tech University, 1982

Watson, Nancy T, Clinical Professor
Educ Admn & Human Resource Dev
PHD, Texas A&M University, 1998

Watson, Patricia K, Instructional Assistant Professor
College of Medicine
MD, Texas A&M Health Science Center College of Medicine, 1981

Watson, Robert O, Assistant Professor
College of Medicine
PHD, Yale University, 2006

Watson, Wesley T, Lecturer
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1999

Watts, Ashlee E, Associate Professor
Vet Large Animal Clinical Sc
DVM, Colorado State University, 2003

Watzak, Bree C, Clinical Associate Professor
College of Pharmacy
PHD, University of Houston College of Pharmacy, 2008

Waugh, Yuki, Instructional Assistant Professor
International Studies
PHD, University of Nebraska, 2006

Waxman, Hersholt C, Professor
Teaching, Learning & Culture
PHD, University of Illinois at Chicago, 1982

Weaver, Constance D, Professor
Accounting
PHD, Arizona State University, 1997

Webb, Robert C, Professor
Physics & Astronomy
PHD, Princeton University, 1972

Webb-Hasan, Gwendolyn, Associate Professor
Educ Admn & Human Resource Dev
PHD, Illinois State University, 1994

Weber, Nathaniel R, Lecturer
History
PHD, Texas A&M University, 2016

Webster, Robert Blair, Professor Of The Practice
College of Engineering
PHD, Purdue University, 1988

Weeks, Bradley R, Professor
Veterinary Pathobiology
PHD, Kansas State University, 1988
DVM, Oklahoma State University, 1983

Wehrly, Thomas E, Senior Professor
Statistics
PHD, University of Wisconsin - Madison, 1976

Weichold, Mark H, Professor
Electrical & Computer Eng
PHD, Texas A&M University, 1983

Weijermars, Rudy, Professor
Petroleum Engineering
PHD, University of Uppsala, 1987

Weimer, Michael B, Professor
Physics & Astronomy
PHD, California Institute of Technology, 1986

Welch, Ben D, Clinical Professor
Management
PHD, Texas A&M University, 1990

Welch, George R, Professor
Physics & Astronomy
PHD, Massachusetts Institute of Technology, 1989

Welch, Jennifer L, Professor
Computer Science & Engineering
PHD, Massachusetts Institute of Technology, 1988

Wellman, Paul J, Professor
Psychological & Brain Sciences
PHD, Iowa State University, 1980

Wells, Gregg B, Associate Professor
College of Medicine
MD, The University of Chicago, 1989
PHD, The University of Chicago, 1987

Wells, Robert J, Associate Professor
Marine Biology
PHD, Louisiana State University, 2007

Wells-Beede, Elizabeth R, Clinical Assistant Professor
College of Nursing
PHD, Capella University, 2018

Welsh Jr, Thomas H, Professor
Animal Science
PHD, North Carolina State University, 1980

Welsh, Christabel Jane, Professor
Vet Integrative Biosciences
PHD, London University, 1981

Welsh, Mark, Professor
Bush School of Govt. - Deans
MA, Webster University, 1987

Welsh, Nancy A, Professor
School of Law
JD, Harvard University, 1982

Wen, Sy-Bor, Associate Professor
Mechanical Engineering
PHD, University of California, Berkeley, 2006

Werner, Cynthia A, Professor
Anthropology
PHD, Indiana University, 1997

Wesner Bradley, Visiting Clinical Assistant Professor
Management
PHD, Texas A&M University, 2011

Wesner, Kylene J, Instructional Assistant Professor
Communication
PHD, Texas A&M University, 2014

Wesselowski, Sonya R, Assistant Professor
Vet Small Animal Clinical Sc
DVM, Kansas State University, 2008

Wesson, Liesl S, Senior Lecturer
Management
MS, Texas A&M University, 1992

Wesson, Michael J, Associate Professor
Management
PHD, Michigan State University, 2002

West, Andrew P, Assistant Professor
College of Medicine
PHD, Yale University Graduate School of Arts and Sciences, 2011

West, Jason B, Associate Professor
Ecosystem Science & Mgmt
PHD, University of Georgia, 2002

West, Laura C, Research Assistant Professor
College of Medicine
PHD, Yale University, 2013

West, William F, Professor
Public Service & Administration
PHD, Rice University, 1981

Wester, Matthew R, Lecturer
Philosophy & Humanities
PHD, Texas A&M University, 2018

Westhusin, Mark E, Professor
Vet Physiology & Pharmacology
PHD, Texas A&M University, 1986

Weston, Anthony, Instructional Professor
Texas A&M University at Qatar
PHD, Kent State University, 1993

Weston, Cynthia G, Assistant Professor
College of Nursing
DNP, University of Texas Health Science Center San Antonio, 2014

Wherley, Benjamin G, Associate Professor
Soil & Crop Sciences
PHD, North Carolina State University, 2008

Whitcomb, Della K, Senior Lecturer
Information & Operations Mgmt
MS, Texas A&M University, 1998

Whitcomb, John D, Professor
Aerospace Engineering
PHD, Virginia Tech, 1988

Whitcomb, John D, Professor
Materials Science & Engr
PHD, Virginia Tech, 1988

White, Edward B, Professor
Aerospace Engineering
PHD, Arizona State University, 2000

White, Edward C, Executive Professor
Finance
MBA, University of Hawaii, 1972

White, Lowell M, Instructional Assistant Professor
English
PHD, Texas A&M University, 2010

White, Sarah H, Assistant Professor
Animal Science
PHD, University of Florida, 2014

Whitfield, Jennifer G, Instructional Assistant Professor
Mathematics
PHD, Texas A&M University, 2017

Whitfield-Cargile, Canaan M, Assistant Professor
Vet Large Animal Clinical Sc
DVM, University of Georgia, 2006

Whitten, Gary D, Clinical Professor
Information & Operations Mgmt
PHD, Louisiana Tech University, 2004

Whitten, Guy D, Professor
Political Science
PHD, University of Rochester, 1994

Wickersham, Tryon A, Associate Professor
Animal Science
PHD, Kansas State University, 2006

Wickliff, Tanya V, Professor of the Practice
College of Engineering
PHD, Texas A&M University, 2005

Wicksten, Mary K, Professor
Biology
PHD, University of Southern California, 1977

Wiederwohl, Christina L, Instructional Associate Professor
Oceanography
PHD, Texas A&M University, 2012

Wiener, Dominique Judith, Clinical Assistant Professor
Veterinary Pathobiology
PHD, University of Bern, Switzerland, 2011
PHD, University of New Bern, 2011
PHD, University of Bern, 2010
PR1, University of Bern, 2005

Wigfall, Lisa T, Assistant Professor
Health & Kinesiology
PHD, University of South Carolina, 2009

Wiggins, Steven N, Professor
Economics
PHD, Massachusetts Institute of Technology, 1979

Wijekumar, Kausalai, Professor
Teaching, Learning & Culture
PHD, The Pennsylvania State University, 2000

Wilborn, David F, Associate Professor
Performance Studies
DOC, University of Texas, 1994

Wilcox, Bradford P, Professor
Ecosystem Science & Mgmt
PHD, Texas A&M University, 1986

Wilkey, William L, Adjunct Assistant Professor
Endodontics
DDS, Georgetown University, 1976

Wilhite, Benjamin A, Associate Professor
Chemical Engineering
PHD, University of Notre Dame, 2003

Wilkerson, Justin, Assistant Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2014

Wilkerson, Justin W, Assistant Professor
Mechanical Engineering
PHD, Johns Hopkins University, 2014

Wilkinson, Heather H, Professor
Plant Pathology & Microbiology
PHD, Binghamton University, 1996

Willett, Donald E, Professor
Liberal Studies
PHD, Texas A&M University, 1985

Williams, Craig E, Adjunct Associate Professor
Oral & Maxillofacial Surgery
DDS, Baylor College of Dentistry, 1972

Williams, Gary W, Professor
Agricultural Economics
PHD, Purdue University, 1981

Williams, Kamala V, Lecturer
Teaching, Learning & Culture
PHD, Texas A&M University, 2010

Williams, Richard, Professor
Electrical & Computer Eng
PHD, University of California at Berkeley, 1978

Williamson, Brandon T, Clinical Assistant Professor
College of Medicine
MD, Texas A&M Health Science Center College of Medicine, 2013

Williamson, Kenneth C, Associate Professor
Construction Science
PHD, University of Oklahoma, 1994

Williamson, Meredith L, Clinical Assistant Professor
College of Medicine
PHD, Texas A&M University, 2014

Williamson, Robert, Adjunct Assistant Professor
Pediatric Dentistry
DDS, The University of Texas Health Science Center at San Antonio, 2005

Williamson, Vickie M, Instructional Professor
Chemistry
PHD, University of Oklahoma, 1992

Wilson, Christin M, Lecturer
Chemical Engineering
PHD, The Ohio State University, 2012

Wilson, Emily, Professor
Biomedical Engineering
PHD, Emory University, 1987

Wilson, Emily, Professor
College of Medicine
PHD, Emory University, 1987

Wilson, Emily, Professor
College of Medicine
PHD, Emory University, 1987

Wilson, Kelly L, Associate Professor
Health & Kinesiology
PHD, Texas A&M University, 2004

Wilson, Phillip D, Clinical Assistant Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1991

Wilson, Van G, Professor
College of Medicine
PHD, Case Western Reserve University, 1980

Wilson-Robles, Heather M, Associate Professor
Vet Small Animal Clinical Sc
DVM, University of Tennessee, 2003

Wilton, David R, Lecturer
English
PHD, University of Toronto, 2016

Winemiller, Kirk O, Professor
Wildlife & Fisheries Sciences
PHD, University of Texas, 1987

Winemiller, Leslie K, Instructional Assistant Professor
Biology
PHD, University of Texas at Austin, 1989

Wingenbach, Gary J, Professor
Ag Leadership, Educ & Comm
PHD, Iowa State University, 1995

Winking, Jeffrey W, Associate Professor
Anthropology
PHD, The University of New Mexico, 2005

Winslow, Jane Futrell, Assistant Professor
Land Arch & Urban Planning
PHD, The University of Texas, 2015
MLA, Kansas State University, 2010

Winslow, William Palmer, Professor Of The Practice
Land Arch & Urban Planning
MLA, University of Michigan, 1982

Winston, Vickie D, Lecturer
English Language Institute
PHD, University of Central Missouri, 2003

Winzer-Serhan, Ursula, Associate Professor
College of Medicine
PHD, University of Bremen, Germany, 1989

Wiseman, Melissa, Instructional Professor
Maritime Business Administration
PHD, Texas Tech University, 1999

Withers, Michael C, Associate Professor
Management
PHD, Arizona State University, 2011

Witherspoon, Sarah J, Professor
Mathematics
PHD, University of Chicago, 1994

Wolf, Charles M, Professor of the Practice
Civil & Environmental Engineering
PHD, Texas A&M University, 2001

Wolf, Joan B, Associate Professor
Women's Studies
PHD, University of Chicago, 1997

Wolfe, Anna W, Assistant Professor
Communication
PHD, Ohio University, 2013

Wolfe, Christopher J, Professor
Accounting
PHD, Kent State University, 1984

Wolinsky, Lawrence E, Professor
Periodontics
DMD, Tufts University, 1980

Wolken, Lawrence C, Senior Professor
Finance
PHD, Texas A&M University, 1972

Wollock, Jennifer G, Professor
English
PHD, Harvard University, 1981

Woltering, Steven, Assistant Professor
Educational Psychology
PHD, University of Toronto, 2012

Womack, James E, Senior Distinguished Professor
Veterinary Pathobiology
PHD, Oregon State University, 1968

Wong, Ka Wai, Assistant Professor
Statistics
PHD, University California, Davis, 2014

Wong, Lolo, Clinical Assistant Professor
Pediatric Dentistry
DDS, Creighton University, 1990

Wong, Zi Jing, Assistant Professor
Aerospace Engineering
PHD, University of California, Berkeley, 2015

Wong, Zi Jing, Assistant Professor
Materials Science & Engr
PHD, University of California, Berkeley, 2015

Wood, Amanda L, Instructional Associate Professor
Ocean Engineering
PHD, University of Houston, 2010

Wood, Billy D, Professor
Political Science
PHD, University of Houston, 1987

Wood, Julia E, Assistant Professor
History
PHD, Yale University, 2011

Woodcock, David R, Adjunct Professor
School of Law
JD, The University of Texas School of Law, 2000

Woodfin, Samuel, Lecturer
Visualization
MFA, Laguna College of Art and Design, 2018

Woodman, Christopher R, Associate Professor
Health & Kinesiology
PHD, University of Arizona, 1995

Woodruff, Sierra C, Assistant Professor
Land Arch & Urban Planning
PHD, University of North Carolina at Chapel Hill, 2017

Woods, Timothy S, Instructional Associate Professor
Sociology
PHD, Texas A&M University, 2000

Woodward, Richard T, Professor
Agricultural Economics
PHD, University of Wisconsin, 1997

Woodward, Robert S, Clinical Associate Professor
Educational Psychology
PHD, Texas A&M University, 2004

Wooley, Karen L, University Distinguished Professor
Chemistry
PHD, Cornell University, 1993

Wooley, Karen L, Professor
Materials Science & Engr
PHD, Cornell University, 1993

Wooten, Leon, Lab Instructor
Biology
PHD, Texas A&M University, 1998

Workman, Michael D, Associate Professor
Educ Admn & Human Resource Dev
PHD, Georgia State University, 2000

Worthy, Darrell A, Associate Professor
Psychological & Brain Sciences
PHD, University of Texas, 2010

Wortman, Martin A, Senior Professor
Industrial & Systems Eng
PHD, Virginia Tech, 1988

Wright Jr, John M, Professor
Diagnostic Sciences
DDS, West Virginia University, 1973

Wright, David L, Professor
Health & Kinesiology
PHD, Pennsylvania State University, 1989

Wright, George C, Professor
History
PHD, Duke University, 1977

Wright, Lesley M, Associate Professor
Mechanical Engineering
PHD, Texas A&M University, College Station, 2006

Wright, Lori E, Professor
Anthropology
PHD, University of Chicago, 1994

Wright, Rachel N, Lab Instructor
Biology
PHD, Texas A&M University, 2011

Wright, Steven M, Professor
Biomedical Engineering
PHD, University of Illinois, 1984

Wright, Steven M, Professor
Electrical & Computer Eng
PHD, University of Illinois, 1984

Wu, Chaodong, Professor
Nutrition & Food Science
PHD, Beijing Medical University, 1998

Wu, Guoyao, Professor
Animal Science
PHD, University of Alberta, Canada, 1989

Wu, Hung-Jen, Assistant Professor
Chemical Engineering
PHD, Texas A&M University, 2006

Wu, Kan, Assistant Professor
Petroleum Engineering
PHD, The University of Texas at Austin, 2014

Wu, Wei, Assistant Professor
Finance
PHD, University of Chicago, 2015
PHD, Duke University, 2009

Wu, Wenhao, Associate Professor
Materials Science & Engr
PHD, University of Chicago, 1992

Wu, Wenhao, Associate Professor
Physics & Astronomy
PHD, University of Chicago, 1992

Wu, Ximing, Professor
Agricultural Economics
PHD, University of California, Berkeley, 2003

Wu, Xin, Research Assistant Professor
College of Medicine
MD, Nantong Medical College, 1985

Wu, Xinyuan Ben, Professor
Ecosystem Science & Mgmt
PHD, University of Tennessee, Knoxville, 1991

Wunneburger, Douglas F, Instructional Associate Professor
Land Arch & Urban Planning
PHD, Texas A&M University, 1992

Wurbs, Ralph A, Senior Professor
Civil & Environmental Engineering
PHD, Colorado State University, 1978

Xiang, Ping, Professor
Health & Kinesiology
PHD, Louisiana State University, 1996

Xie, Le, Professor
Electrical & Computer Eng
PHD, Carnegie Mellon University, 2009

Xie, Linglin, Associate Professor
Nutrition & Food Science
PHD, Kansas State University, 2008

Xie, Yu Xuan, Assistant Professor
Materials Science & Engr
PHD, University of Sydney, 2013

Xie, Zhigang, Research Assistant Professor
College of Medicine
PHD, University of Alabama - Birmingham, 2001

Xie, Zhizhang, Associate Professor
Mathematics
PHD, The Ohio State University, 2011

Xiong, Zixiang, Professor
Electrical & Computer Eng
PHD, University of Illinois, 1996

Xu, Shiqing, Research Associate Professor
Chemistry
PHD, Fudan University, 2009

Xu, Xiaohui, Associate Professor
Epidemiology & Biostatistics
PHD, University of Pittsburgh, 2007

Xu, Yangyang, Assistant Professor
Atmospheric Sciences
PHD, University of California, San Diego, 2014

Xu, Yi, Associate Professor
Institute of Biosciences & Tec
PHD, The University of Texas Health Science Center at Houston, 1998

Yadav, Manjit S, Professor
Marketing
PHD, Virginia Tech, 1990

Yakovlev, Vladislav V, Professor
Biomedical Engineering
PHD, Moscow State University, 1990

Yalvac, Bugrahan, Associate Professor
Teaching, Learning & Culture
PHD, Pennsylvania State University, 2005

Yamauchi, Takashi, Associate Professor
Psychological & Brain Sciences
PHD, Columbia University, 1997

Yan, Huafei, Professor
Mathematics
PHD, Massachusetts Institute of Technology, 1997

Yan, Wei, Professor
Architecture
MAR, University of California - Berkeley, 2004

Yan, Xin, Assistant Professor
Chemistry
PHD, Purdue, 2015

Yancey, Thomas E, Professor
Geology & Geophysics
PHD, University of California, Berkeley, 1971

Yanchik, Ashley E, Veterinary Resident
Vet Large Animal Clinical Sc
DVM, University of Pennsylvania School of Veterinary Medicine, 2011

Yang, Ping, Professor
Atmospheric Sciences
PHD, University of Utah, 1995

Yang, Tian, Assistant Professor
Mathematics
PHD, Rutgers University at New Brunswick, 2013
PHD, Rutgers, The State University of New Jersey, 2013

Yang, Xiaomin, Senior Lecturer
Eng Tech & Ind Distribution
PHD, Purdue University, 2002

Yarnold, Matthew T, Assistant Professor
Civil & Environmental Engineering
PHD, Drexel University, 2013

Yasskin, Philip B, Associate Professor
Mathematics
PHD, University of Maryland, 1979

Yeh, Alvin T, Associate Professor
Biomedical Engineering
PHD, University of California, Berkeley, 2000

Yennello, Sherry J, Professor
Chemistry
PHD, Indiana University, 1990

Yi Eunjeong, Professor
Foundational Sciences
PHD, University of Houston, 2003

Ying, Qi, Associate Professor
Civil & Environmental Engineering
PHD, University of California, Davis, 2004

Yoon, Byung-Jun, Associate Professor
Electrical & Computer Eng
PHD, California Institute of Technology, 2007

Yoon, Myeongsun, Associate Professor
Educational Psychology
PHD, Arizona State University, 2007

York, Beverly D, Clinical Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1981

Yorzinski, Jessica L, Assistant Professor
Wildlife & Fisheries Sciences
PHD, University of California Davis, 2012

Younes, Khaled M, Adjunct Assistant Professor
Comprehensive Dentistry
DDS, University of Science and Technology in Yemen, 2000

Young, Devin, Lecturer
George Bush School of Govern
LLM, TJAG Legal Center and School, 2005
JD, George Mason University, 2001

Young, James L, Adjunct Professor
School of Law
JD, University of Houston, 1985

Young, Keith A, Adjunct Professor
College of Medicine
PHD, The University of Texas at Austin, 1990

Young, Matthew P, Professor
Mathematics
PHD, Rutgers University, 2004

Young, Michael, Professor
Bush School of Govt. - Deans
DJ, Harvard Law School, 1976

Young, Robin F, Professor
College of Medicine
PHD, Vanderbilt University, 1988

Young, Ryland F, Distinguished Professor
Biochemistry & Biophysics
PHD, University of Texas at Dallas, 1975

Yu, Alan Zhihuai, Professor Of The Practice
Geology & Geophysics
PHD, University of South Carolina, 1992

Yu, Choongho, Associate Professor
Mechanical Engineering
PHD, University of Texas - Austin, 2004

Yu, Choongho, Associate Professor
Materials Science & Engr
PHD, University of Texas - Austin, 2004

Yu, Guoliang, Distinguished Professor
Mathematics
PHD, State University Of New York At Stony Brook, 1991

Yu, Ling, Research Associate Professor
Vet Physiology & Pharmacology
PHD, Nanjing Agricultural University, 2001

Yu, Peter H, Research Assistant Professor
College of Medicine
PHD, Texas A&M University, 2010

Yu, Peter K, Professor
School of Law
JD, Yeshiva University, 1999

Yu, Shilin, Visiting Assistant Professor
Mathematics
PHD, Pennsylvania State University, 2013

Yuan, Shuhua, Professor
Plant Pathology & Microbiology
PHD, University of Tennessee, 2007

Yum, Ki H, Senior Lecturer
Computer Science & Engineering
PHD, The Pennsylvania State University, 2002

Yust, Christopher G, Assistant Professor
Accounting
PHD, The University of Texas of Austin, 2015

Yvon-Lewis, Shari A, Professor
Oceanography
PHD, University of Miami, 1994

Zadeh, Jamshyd M, Adjunct Professor
School of Law
JD, Southern Methodist University Dedman School of Law, 1988

Zagaris, Bruce, Adjunct Professor
School of Law
LLM, George Washington University, 1973
JD, George Washington University, 1972

Zahabi, Maryam, Assistant Professor
Industrial & Systems Eng
PHD, North Carolina State University, 2017

Zambrano-Roman, Byron Alfonso, Research Assistant Professor
Mechanical Engineering
PHD, Michigan State University, 2017

Zandinejad, Amirali, Associate Professor
Comprehensive Dentistry
DDS, Islamic Azad University, 1996

Zanwar, Preeti C, Instructional Assistant Professor
Epidemiology & Biostatistics
PHD, University of Texas, 2012

Zapata, Cindy P, Associate Professor
Management
PHD, University of Florida, 2008

Zapata, Gabriela C, Associate Professor
Hispanic Studies
PHD, The Pennsylvania State University, 2002

Zardkoohi, Asghar, Professor
Management
PHD, Virginia Polytechnic Institute and State University, 1977

Zarei, Mahsa, Research Assistant Professor
Vet Physiology & Pharmacology
PHD, University of Mysore (India), 2014
PHD, University of Mysore, India, 2014

Zartman, Justin A, Adjunct Professor
School of Law
JD, Texas Wesleyan University, 2008

Zartman, Rosemarie R, Clinical Associate Professor
Comprehensive Dentistry
DDS, Baylor College of Dentistry, 1991

Zawadzki, Mary F, Instructional Assistant Professor
Visualization
PHD, The City University of New York, 2015

Zawieja, David, Regent's Professor
College of Medicine
PHD, The Medical College of Wisconsin, 1986

Zawieja, David C, Professor
College of Medicine
PHD, The Medical College of Wisconsin, 1986

Zelenko, Igor, Associate Professor
Mathematics
PHD, Technion - Israel Institute of Technology, 2002

Zeng, Lanying, Associate Professor
Biochemistry & Biophysics
PHD, University of Illinois at Urbana-Champaign, 2007

Zeng, Li, Assistant Professor
Industrial & Systems Eng
PHD, University of Wisconsin, Madison, 2009

Zent, Rodney L, Assistant Lecturer
Ag Leadership, Educ & Comm
PHD, Texas A&M University, 1981

Zhan, Hongbin, Professor
Geology & Geophysics
PHD, University of Nevada, Reno, 1996

Zhan, Wei, Associate Professor
Eng Tech & Ind Distribution
PHD, Washington University in St. Louis, 1991

Zhang, Dan D, Professor
Educational Psychology
PHD, University of New Orleans, 1998

Zhang, Dekai, Associate Professor
Institute of Biosciences & Tec
PHD, University of Hong Kong, 1995

Zhang, Hongbin, Professor
Soil & Crop Sciences
PHD, University of California, Davis, 1990

Zhang, Hua, Instructional Assistant Professor
Biomedical Sciences
PHD, University of Missouri-Kansas City, 2010
MD, Qingdao Medical College, Qingdao, China, 1994

Zhang, Junjie, Assistant Professor
Biochemistry & Biophysics
PHD, Baylor College of Medicine, 2009

Zhang, Ke, Associate Professor
Institute of Biosciences & Tec
PHD, Kansas State University, 2008

Zhang, Renyi, Distinguished Professor
Atmospheric Sciences
PHD, Massachusetts Institute of Technology, 1994

Zhang, Shenyuan, Associate Professor
College of Medicine
PHD, University of California - Irvine, 2005

Zhang, Shenyuan, Associate Professor
College of Medicine
PHD, University of California - Irvine, 2005

Zhang, Xi, Professor
Electrical & Computer Eng
PHD, University of Michigan, 2002

Zhang, Xianyang, Assistant Professor
Statistics
PHD, University of Illinois at Urbana - Champaign, 2013

Zhang, Xiuren, Professor
Biochemistry & Biophysics
PHD, Cornell University, 2003

Zhang, Xudong, Professor
Industrial & Systems Eng
PHD, University of Michigan Ann Arbor, 1997

Zhang, Xudong, Professor (courtesy appointment)
Mechanical Engineering
PHD, University of Michigan Ann Arbor, 1997

Zhang, Yige, Assistant Professor
Oceanography
PHD, Yale University, 2015

Zhang, Yu, Associate Professor
Agricultural Economics
PHD, Texas A&M University, 2010

Zhang, Yunlong, Professor
Civil & Environmental Engineering
PHD, Virginia Tech, 1996

Zhang, Yuzhe, Associate Professor
Economics
PHD, University of Minnesota, 2006

Zhang, Zhe, Assistant Professor
Geography
PHD, Aalto University, 2016

Zhao, Hongwei, Professor
Epidemiology & Biostatistics
PHD, Harvard University School of Public Health, 1997

Zhao, Hu, Assistant Professor
Comprehensive Dentistry
DDS, University of California Los Angeles, 2011

Zhao, Shixi, Visiting Lecturer
Health & Kinesiology
PHD, Texas A&M University, 2018

Zheltikov, Alexey M, Professor
Physics & Astronomy
PHD, M.V. Lomonosov Moscow State University, 1990

Zheng, Qi, Professr
Epidemiology & Biostatistics
PHD, Texas A&M University, 1993

Zhong, Lixian, Assistant Professor
College of Pharmacy
PHD, Duke University, 2011

Zhou, Hongcai J, Professor
Chemistry
PHD, Texas A&M University, 2000

Zhou, Hongcai J, Professor
Materials Science & Engr
PHD, Texas A&M University, 2000

Zhou, Jianxin, Professor
Mathematics
PHD, Pennsylvania State University, 1986

Zhou, Lan, Associate Professor
Statistics
PHD, University of California, Berkeley, 1997

Zhou, Yubin, Associate Professor
Institute of Biosciences & Tec
PHD, Georgia State University, 2008

Zhu Salzman, Keyan, Professor
Entomology
PHD, Purdue University, 1994

Zhu, Ding, Professor
Petroleum Engineering
PHD, University of Texas, 1992

Zhu, Guan, Professor
Veterinary Pathobiology
PHD, University of Georgia, 1993

Zhu, Lin, Assistant Professor
College of Pharmacy
PHD, University of Tennessee Health Science Center, 2010

Zhu, Xuemei, Associate Professor
Architecture
PHD, Texas A&M University, 2008

Zilany, Muhammad Shamsul Arefeen, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, McMaster University, 2007

Zimmer Jr, Warren E, Professor
College of Medicine
PHD, Baylor College of Medicine, 1985

Zimmer, Mary R, Clinical Associate Professor
Marketing
PHD, University of Texas, 1985

Zimmer, Warren, Professor
College of Medicine
PHD, Baylor College of Medicine, 1985

Zimmermann, Mark J, Adjunct Professor
School of Law
JD, University of Virginia, 1975

Zoghi, Behbood B, Professor
Eng Tech & Ind Distribution
PHD, Texas A&M University, 1993

Zollinger, Dan, Professor
Civil & Environmental Engineering
PHD, University of Illinois at Urbana-Champaign, 1989

Zoran, Debra L, Professor
Vet Small Animal Clinical Sc
PHD, Texas A&M University, 1997
DVM, Kansas State University, 1984

Zoran, Mark J, Professor
Biology
PHD, Iowa State University, 1987

Zou, Jun, Professor
Electrical & Computer Eng
PHD, University of Illinois, 2002

Zou, Lei, Assistant Professor
Geography
PHD, Louisiana State University, 2017

Zou, Na, Instructional Assistant Professor
Industrial & Systems Eng
PHD, Arizona State University, 2015

Zubairy, Muhammad S, University Distinguished Professor
Physics & Astronomy
PHD, University of Rochester, 1979

Zubairy, Sarah, Associate Professor
Economics
PHD, Duke University, 2010

Zuniga, Kelly J, Lecturer
George Bush School of Govern
PHD, University of Houston, 2005

scialdone, Michael, Clinical Associate Professor
Information & Operations Mgmt
PHD, Syracuse University, 2014

Graduate Faculty

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Graduate Committee Faculty (p. 1480)

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Graduate Faculty Overview

The Graduate Faculty at Texas A&M University consists of the President, the Provost and Executive Vice President, the Associate Provosts, the Deans of all subject-matter colleges, selected Directors, and properly qualified academic groups.

This document presents University policies and practices which Department Heads, Deans, and Intercollegiate faculties should follow in nominating members to the Graduate Committee Faculty of Texas A&M University for participation on graduate student advisory committees. This document also discusses the various roles of Graduate Committee Faculty and describes the credentialing requirements for the Graduate Teaching Faculty. Departments, intercollegiate faculties, and colleges may require additional prerequisites for individuals seeking an appointment to the Graduate Committee Faculty. Additional

requirements are subject to review and approval by the Associate Provost for Graduate and Professional Studies.

The Graduate Committee Faculty Nomination form is accessed by logging into <http://gradcom.tamu.edu>. For questions regarding access to the Graduate Committee Faculty Nomination site please contact the GradCom Administrator at gradcom@tamu.edu. The form should be completed in its entirety and the appropriate documents uploaded. Once complete, the nomination will be submitted for approval through the workflow.

Only those who are authorized to sign and submit graduate documents have been given access to the Graduate Committee Faculty Nomination system.

Graduate Teaching Faculty

According to SACS-COC guidelines, faculty teaching graduate and post-baccalaureate course work should have an earned doctorate or terminal degree in the teaching discipline or a related discipline. Other credentials that may be considered include possessing a master's degree or at least 18 semester credit hours of graduate-level coursework in the same or closely related field; professional licensure or certification in a related field or profession; or significant professional, research, or teaching experience in the same or closely related field. Faculty members meeting these credentialing requirements are automatically members of the Graduate Teaching Faculty.

The office of the dean of faculties assumes responsibility for verifying the teaching qualifications for faculty. Colleges and departments oversee hiring of graduate assistants who serve as instructors of record for undergraduate courses. The guidelines for all instructional faculty, including graduate teaching assistants, who are instructors of record for graduate and undergraduate courses at Texas A&M University and its two branch campuses, Texas A&M University Galveston campus and Texas A&M University Qatar campus are available at:

http://dof.tamu.edu/dof/media/PITO-DOF/Documents/Guidelines/credentialing/credentialing_guidelines.pdf

In addition to meeting the credentialing requirements for teaching graduate courses, faculty teaching research courses such as 691 and other designated courses must also be members of the Graduate Committee Faculty.

Graduate Committee Faculty

Appointees to the Graduate Committee Faculty participate in the graduate degree programs of the University by serving on graduate student advisory committees.

Members of the Graduate Committee Faculty are selected from qualified individuals of the faculty and professional staff of Texas A&M University; from employees of Texas A&M University System agencies such as Texas A&M AgriLife Research, Texas A&M Forest Service, Texas A&M AgriLife Extension, TEES, and TTI; from employees of affiliated research organizations (such as USDA) located near Texas A&M campus sites, and from affiliated hospitals and clinical organizations.

Nomination for membership on the Graduate Committee Faculty is always initiated by the head of the appropriate academic department, intercollegiate faculty, or dean of college (under special circumstances)

of Texas A&M University and is processed as discussed in the following sections.

Appointment to membership on the Graduate Committee Faculty, while considered an honor, serves functional purposes as well. Appointment to membership is not for the sole purpose of conferring recognition upon an individual, but is designed to assure competence in the directing and advising of graduate students. Such competence is, in part, a function of experience and knowledge of operational procedures; it is also characterized by ability and motivation.

Membership on the Graduate Committee Faculty is maintained only by participating in graduate programs by directing or administering graduate work, by doing research and publishing, or by other direct and substantial contributions to the graduate programs of the University, such as through service on a Graduate Instruction Committee or with administrative assignments in graduate education. A member of the graduate committee faculty may not serve on the graduate committee faculty of an academic program in which the member is pursuing a graduate degree or certificate. Individuals who have not been appointed to the Graduate Committee Faculty may not serve on student advisory committees unless special approval is granted by the Associate Provost for Graduate and Professional Studies.

The Graduate Council expects that all Deans, Department Heads and Chairs of Intercollegiate Faculty will regularly review the Graduate Committee Faculty under their direction and will recommend withdrawal of the appointments of any members who no longer merit membership on the Graduate Committee Faculty on the basis of their lack of contribution to graduate education. If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Committee Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The student should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The Department Head or Chair of intercollegiate faculty shall notify any faculty member who is non-voluntarily removed from the roles of the Graduate Committee Faculty, and the faculty member has the right to appeal his/her removal through University Rule 12.99.99.M2 (Faculty Grievances Procedures).

The two categories of membership include: 1) Member, and 2) Special Appointment.

Possible Roles of Graduate Committee Faculty

| Role | Member | | | |
|----------|-----------------------------|------------------------------------------------------------|-----------------------------------------|-----------------------------------------|
| | Master's Only (MS or MA) | Master's Only – [MEd, other Professional Masters] | Doctoral [PhD, DrPH] and Master's | Doctoral [EdD, DEng] and Master's |
| Chair | X | X | X | X |
| Co-Chair | X | X | X | X |
| Member | X | X | X | X |

Special Appointment

Extra member
(non-voting)

Members of Graduate Committee Faculty

A. Tenured and Tenure-Track TAMU Faculty

Tenured and Tenure-track (T/TT) faculty members of Texas A&M University are eligible to participate as members of the Graduate Committee Faculty under criteria and guidelines as established by each college or department. Also academic professional track faculty members employed by Texas A&M University Qatar campus (TAMUQ) with appropriate professorial rank (assistant professor, associate professor, or professor) are eligible to participate as members of the Graduate Committee Faculty. The aforementioned faculty members may serve as chair, co-chair, or member of advisory committees of master's and doctoral students.

Appointment of a T/TT faculty member is accomplished when a new hire is identified as graduate faculty in the Dean of Faculties hiring portal. The faculty member will be added only to the programs associated with the hiring department. Nominations of T/TT faculty members who are not adloc'd to a graduate degree-granting unit, to serve as chair or co-chair in a graduate degree-granting unit must come from the department head or chair of intercollegiate faculty for that graduate degree-granting unit. This is accomplished by submitting a Graduate Committee Faculty nomination through the Graduate Committee Faculty nomination website: <http://gradcom.tamu.edu>. The nominations will progress through a workflow system to receive the approval of the department head or chair of intercollegiate faculty for that graduate degree-granting unit. Appointment of an academic professional track faculty member employed by Texas A&M University Qatar campus (TAMUQ) with appropriate professorial rank (assistant professor, associate professor, or professor) is accomplished through use of the Graduate Committee Faculty nomination and letter from the TAMUQ Graduate Instruction Committee (the members of which shall be members of the Graduate Committee Faculty at TAMU) through the Dean/CAO of the TAMUQ campus and the appropriate administrative chain at TAMU.

B. Academic Professional Track Faculty and Professional Staff of TAMU, TAMUS Agencies, Affiliated research organizations, and Affiliated Hospitals and Clinical Organizations

An academic professional track faculty employed by TAMU, designated TAMUS agencies, or affiliated hospitals and clinical organizations is eligible to participate as a member of the Graduate Committee Faculty (if permitted by department or college guidelines), and may serve as chair, co-chair, or member of advisory committees of master's and doctoral

students with appropriate approval. Professional staff employed by TAMU, designated TAMUS agencies, or affiliated hospitals and clinical organizations are eligible to participate as a member of the Graduate Committee Faculty (if permitted by department or college guidelines), and may serve as co-chair or member of advisory committees of master's and doctoral students with appropriate approval.

Appointments of these academic professional track individuals and professional staff are accomplished by submitting a Graduate Committee Faculty nomination through the Graduate Committee Faculty nomination website: <http://gradcom.tamu.edu>. The nominations will progress through a workflow system to obtain approvals from the appropriate department head or chair of intercollegiate faculty, Chair of the Graduate Instruction Committee and the College dean. The workflow will issue a letter request, initiated by the head of the academic department, dean of college, or chair of intercollegiate faculty, through the College Graduate Instruction Committee and the College Dean. The letter must provide evidence that the nominee meets the qualifications for the desired role(s).

1. General qualifications for serving on advisory committees for master's students only

Minimum qualifications for academic professional track faculty or professional staff employed by TAMU, designated TAMUS agencies, affiliated research organizations, or affiliated hospitals and clinical organizations to serve in the various roles of the graduate committee faculty for master's students only are described below each role in the following section.

Chair role:

The following minimum qualifications must be met for eligibility to serve in the chair role on advisory committees for master's students.

- (a) qualifications (a)-(d) listed below for co-chair role
- (b) employment location near city of Texas A&M campus site (except for online programs).

Co-Chair role:

The following minimum qualifications must be met for eligibility to serve in the co-chair role on advisory committees for master's students.

- (a) has an earned master's or terminal degree
- (b) has actively served on a graduate student's advisory committee, or held/holds an administrative assignment in a graduate program at Texas A&M or another university
- (c) has published a scholarly work as primary author or corresponding author, or appropriate evidence of professional accomplishments related to the discipline
- (d) employed by Texas A&M University; Texas A&M University System agencies such as Texas A&M AgriLife Research, Texas A&M Forest Service, Texas A&M AgriLife Extension, TEES, TTI; affiliated research organizations, or affiliated hospitals and clinical organizations with professorial rank.

Member role:

The following minimum qualifications must be met for eligibility to serve in the member role on advisory committees for master's students.

- (a) has an earned master's or terminal degree, or an earned bachelor's degree and appropriate evidence of professional accomplishments related to the discipline

Exceptions to the minimum qualifications of any of the various roles listed above may be requested as a part of the letter from heads of departments, deans of colleges, or chairs of intercollegiate faculty through the Graduate Instruction Committee and Dean of College.

2. General qualifications for serving on advisory committees for doctoral students

Minimum qualifications for academic professional track faculty or professional staff employed by TAMU, designated TAMUS agencies, affiliated research organizations, or affiliated hospitals and clinical organizations to serve in the various roles of the graduate committee faculty for doctoral students are described below each role in the following section.

Chair role:

The following minimum qualifications must be met for eligibility to serve in the chair role on advisory committees for doctoral students.

- (a) qualifications (a)-(d) listed below for co-chair role
- (b) employment location near city of Texas A&M campus site (except for on-line programs).

Co-Chair role:

The following minimum qualifications must be met for eligibility to serve in the co-chair role on advisory committees for doctoral students.

- (a) has an earned doctoral or terminal degree
- (b) has actively served on a graduate student advisory committee, or held/holds an administrative assignment in a graduate program at Texas A&M or another university
- (c) has published a scholarly work as primary author or corresponding author, or appropriate evidence of professional accomplishments related to the discipline
- (d) employed by Texas A&M University; Texas A&M University System agencies such as Texas A&M AgriLife Research, Texas A&M Forest Service, Texas A&M AgriLife Extension, TEES, TTI; affiliated research organizations, or affiliated hospitals and clinical organizations with professorial rank.

Member role:

The following minimum qualifications must be met for eligibility to serve in the member role on advisory committees for doctoral students.

- (a) has an earned doctoral or terminal degree, or an earned master's degree and appropriate evidence of professional accomplishments related to the discipline

Exceptions to the minimum qualifications of any of the various roles listed above may be requested by heads of departments, deans of colleges, or chairs of intercollegiate faculty through the Graduate Instruction Committee and Dean of College.

C. Faculty and Professional Staff Employed By Other Institutions and Organizations

Faculty and professionals not employed by TAMU, TAMUS agencies listed in section B, or affiliated hospitals and clinical organizations are eligible to participate as a member of the Graduate Committee Faculty (if permitted by department or college guidelines), and may serve as co-chair or member of advisory committees of master's and doctoral students with appropriate approval.

Appointments of the aforementioned individuals are accomplished by submitting a Graduate Committee Faculty nomination through the Graduate Committee Faculty nomination website: <http://gradcom.tamu.edu>. The nominations will progress through a workflow system to receive the approvals of the department head or chair of intercollegiate faculty, Chair of the Graduate Instruction Committee and College dean. The workflow will request a letter, initiated by the head of the academic department, dean of college, or chair of intercollegiate faculty, through the College Graduate Instruction Committee and the College Dean. The letter must provide evidence that the nominee meets the qualifications for the desired role(s).

1. General qualifications for serving on advisory committees for master's students only

Minimum qualifications for individuals who are not employed by TAMU, TAMUS agencies listed in section B, or affiliated hospitals and clinical organizations are described below each role in the following section.

Co-Chair role:

The following minimum qualifications must be met for eligibility to serve in the co-chair role on advisory committees for master's students.

- (a) has an earned master's or terminal degree
- (b) has actively served on a graduate student advisory committee, or held/holds an administrative assignment in a graduate program at Texas A&M or another university
- (c) has published a scholarly work as primary author or corresponding author, or appropriate evidence of professional accomplishments related to the discipline

Member role:

The following minimum qualifications must be met for eligibility to serve in the member role on advisory committees for master's students.

- (a) has an earned master's or terminal degree, or an earned bachelor's degree and appropriate evidence of professional accomplishments related to the discipline

Exceptions to the minimum qualifications of any of the various roles listed above may be requested as a part of the letter from heads of departments, deans of colleges, or chairs of intercollegiate faculty through the Graduate Instruction Committee and Dean of College.

2. General qualifications for serving on advisory committees for doctoral students

Minimum qualifications for individuals who are not employed by TAMU, TAMUS agencies listed in section B, affiliated research organizations, or affiliated hospitals and clinical organizations to serve in the various roles

of the graduate committee faculty for doctoral students are described below each role in the following section.

Co-Chair role:

The following minimum qualifications must be met for eligibility to serve in the co-chair role on advisory committees for doctoral students.

- (a) has an earned doctoral or terminal degree
- (b) has actively served on a graduate student advisory committee, or held/holds an administrative assignment in a graduate program at Texas A&M or another university
- (c) has published a scholarly work as primary author or corresponding author, or appropriate evidence of professional accomplishments related to the discipline

Member role:

The following minimum qualifications must be met for eligibility to serve in the member role on advisory committees for doctoral students.

- (a) has an earned doctoral or terminal degree, or an earned master's degree and appropriate evidence of professional accomplishments related to the discipline

Exceptions to the minimum qualifications of any of the various roles listed above may be requested by heads of departments, deans of colleges, or chairs of intercollegiate faculty through the Graduate Instruction Committee and Dean of College.

Special Appointments

Situations may exist where the head of an academic department or chair of intercollegiate faculty wishes to have qualified individuals serve [such as, from another university, government or industry] on a student's Advisory Committee without being permanent members on the Graduate Committee Faculty. An individual serving as a Special Appointment on a student's Advisory Committee does not count toward the minimum number of Graduate Committee Faculty necessary to form the committee. Special appointments are accomplished by submitting a Graduate Committee Faculty nomination through the Graduate Committee Faculty nomination website: <http://gradcom.tamu.edu>. The nominations will progress through a workflow system to obtain approvals from the department head or chair of intercollegiate faculty.

The workflow will request a letter, initiated by the head of an academic department or chair of intercollegiate faculty to the Associate Provost for Graduate and Professional Studies with the individual's resume attached. The letter should state the merits of the individual being nominated and should include a list of the specific student advisory committees on which the individual will serve.

Approved by the Faculty Senate on August 10, 2015

Intercollegiate Faculty

Texas A&M University has established the concept of an intercollegiate faculty with expressed goals of

1. fostering development and communication in disciplinary fields represented by faculty members in different departments and colleges,
2. utilizing faculty expertise in specific areas to strengthen emerging disciplinary programs and

3. overseeing the academic administration of graduate degree programs in a particular discipline.

To have access to an intercollegiate faculty's degree programs, a graduate student must be admitted to that program and a member of that faculty must serve as chair or co-chair of the student's advisory committee.

Intercollegiate faculties have been formed in agribusiness, biotechnology, engineering systems management, genetics, molecular and environmental plant sciences, neuroscience, toxicology, reproductive biology, and water management and hydrological science.

Texas A&M University System Graduate Faculty

The Texas A&M University System (TAMUS) has established a System Graduate Faculty which enables and facilitates collaborations among System institutions. Membership on the TAMUS Graduate Faculty provides students with access to faculty expertise throughout the System. Membership also creates an edge in recruiting top students into individual programs and helps provide recruiting opportunities with an intellectually, geographically and ethnically diverse pool of students. Members of the TAMUS Graduate Faculty are granted Associate Member status on the Texas A&M University Graduate Faculty. As a result, these faculty may serve on graduate advisory committees as a member or a co-chair (but not as chair) with a member of the Texas A&M University Graduate Faculty or they may teach a graduate course.

System Graduate Faculty Guidelines

1. Purpose. The Texas A&M University System Graduate Faculty has been developed for the following purposes:
 - a. To facilitate participation in graduate education for a student in the A&M System.
 - b. To provide a graduate student access to the expertise of faculty members throughout the System.
 - c. To increase inter-institutional faculty collaboration throughout the A&M System.
 - d. To promote the development of multi-disciplinary educational and research programs and the capacity to study complex scientific and social issues.
2. Membership Background
 - a. Membership on the A&M System Graduate Faculty provides the opportunity to participate in graduate education at the A&M System universities through serving on graduate committees, advising a graduate student, and teaching graduate courses.
 - b. Appointment to membership on the A&M System Graduate Faculty is designed to assure rigor in the directing, counseling, and teaching of a graduate student.
 - c. All of the A&M System Graduate Faculty members can serve as members of any graduate committee.
 - d. The chair, or co-chair, of a graduate committee must be from the institution that is conferring the graduate degree.
3. Membership Qualifications. Consideration for membership on the A&M System Graduate Faculty requires meeting the following qualifications.
 - a. The individual must hold the terminal degree, usually an earned doctorate. Exceptions will be considered only if justified in accordance with the "Southern Association of Colleges and Schools Commission on Colleges."
 - b. The individual must be a tenured or a tenure-track faculty member of a Texas A&M University System university and hold a professorial rank.
 - c. A person holding the title of instructor or lecturer may not be considered for membership on the A&M System Graduate Faculty.
 - d. Individuals holding professorial rank at an agency of the A&M System are eligible for membership.
 - e. The individual must be a member of the graduate faculty at his/her home institution.
 - f. The individual must be an active participant in his/her graduate program through teaching, directing or administering graduate work.
 - g. The individual must show evidence of active research and scholarly work within the past five years. This should include publication as primary author of scholarly works in peer-reviewed journals, publication of scholarly books, presentations at professional meetings, or creative works, such as performances, work in juried exhibitions, or other creative works appropriate to the individual's discipline.
 - h. A graduate student at any A&M System institution may not be a member of the A&M System Graduate Faculty. Membership on the A&M System Graduate Faculty is forfeited upon a faculty or staff member's admission to a graduate program at any institution in the A&M System.
4. Nomination, Appointment and Review Process
 - a. Nomination for membership to the A&M System Graduate Faculty is made by submission of an official application by a faculty member and an accompanying letter of endorsement from the individual's department head or chair and college dean. The application and letter of endorsement are sent to the graduate dean, who certifies institutional graduate faculty appointment status, and forwards the nomination to the A&M System Council of Graduate Deans for consideration and action.
 - b. The application from the faculty member must identify the institutional graduate faculty of which he or she is a member, specify the graduate degree(s) that he or she is qualified to supervise under the conditions of the institutional appointment, and specify the graduate program(s) in which he or she wishes to participate as a System graduate faculty member. The application should be accompanied by a current curriculum vitae.
 - c. The Council of Graduate Deans will appoint faculty from member institutions as needed to a Graduate Faculty Review Advisory Committee to consider applications and reappointments and to make recommendations to the Council of Graduate Deans.
 - d. An A&M System Graduate Faculty member is appointed for a five-year term. At the end of the five-year term, the member will be re-evaluated for reappointment by the Council of Graduate Deans. Failure to maintain membership criteria will result in removal from the A&M System Graduate Faculty. The Council of Graduate Deans will notify by letter a faculty member who is non-voluntarily removed from membership on the A&M System Graduate Faculty. The faculty member's department head, dean, provost and graduate dean will also receive notification.
5. Graduate Faculty Membership List. A list of current membership will be maintained in the Office of the Vice Chancellor for Academic and Student Affairs, the graduate office at each System university and on the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

INTERNATIONAL OPPORTUNITIES FOR STUDENTS

Education Abroad Programs Office

<http://abroad.tamu.edu>

Texas A&M University is committed to providing access to high impact international opportunities for all students. The ability to engage successfully across cultures and the development of international leadership skills and global awareness are crucial for success and lifelong learning.

The Education Abroad Programs Office provides access for all Texas A&M students to a broad range of transformational and international experiences lasting from one week to an academic year. Last year, over 5,500 students participated in study, intern, volunteer, and research opportunities in over 100 different countries. Our office also contributes to the development of on-campus experiences that foster cultural awareness.

Many graduate and professional students pursue careers in academic, managerial or administrative positions that benefit from conducting research, attending conferences, working, living or studying abroad.

When considering an international opportunity, it is important for a student to consult with his/her committee chair early. Not all credits can be applied to a degree plan, so pre-trip planning and approval is very important.

Students are encouraged to visit the Education Abroad Programs Office, located on the 1st floor of the Pavilion, any weekday from 8 am – 5 pm for additional information.

Faculty-led Programs

These are programs led by a Texas A&M faculty member and students receive A&M credit. To find the most recent faculty-led program offerings, visit <http://abroad.tamu.edu/Program-Types/Faculty-led>.

Exchange Programs (REEPs)

These programs give students the opportunity to enroll and pay tuition at Texas A&M but “switch places” with counterparts at foreign institutions. Students can find both university-wide exchange and college-specific exchange programs at [http://abroad.tamu.edu/Program-Types/Exchange-\(REEPs\)](http://abroad.tamu.edu/Program-Types/Exchange-(REEPs)).

Intern and Volunteer

Students have a variety of options for credit or non-credit intern or volunteer abroad programs. Students can find opportunities through Texas A&M offices and students organizations as well as third-party affiliate providers at <http://abroad.tamu.edu/Program-Types/Intern-Research-Volunteer>.

Research

In some cases, graduate students are employed as part of a research project, and in others, they register for research hours at Texas A&M and go abroad independently. In all such cases, students must register their research experiences with the Education Abroad Programs Office.

Learn more at <http://abroad.tamu.edu/Program-Types/Intern-Research-Volunteer>.

Transfer Credit and Supervised Direct Enrollment

Students may opt to pursue a study abroad program through one of our third-party affiliate providers. Please check with your academic advisor to determine courses that can transfer and visit our website to learn more at <http://abroad.tamu.edu/Program-Types/Transfer-Credit>.

Another option is to direct enroll at a foreign university as a non-degree seeking student to study. In some cases, your faculty advisor or academic department may have an existing collaboration with a foreign university.

Degrees from Foreign Universities

Occasionally, a student may wish to receive an advanced degree from an international university, such as a master's degree. Students should work with their advisor to identify degree programs that will fit into your long-term academic or career plans.

University Locations Abroad

Many Texas A&M partner organizations offer international opportunities to students. Students can check the Education Abroad Programs Office search engine to locate such experiences or contact their academic departments about programs and locations they recommend. In addition, Texas A&M has a research and education center in Costa Rica.

The Soltis Center for Research and Education in Costa Rica

<http://soltiscentercostarica.tamu.edu>

The Soltis Center for Research and Education in north-central Costa Rica was established in January 2009 to support research, education and outreach in Costa Rica and throughout Central America. The unique physical and cultural setting of the center provides students and faculty with research and educational opportunities in tropical ecology, civil engineering, ecosystem sciences, geosciences, public and rural health and agricultural economics.

Funding to Go Abroad

Federal and other financial aid may be adjusted to accommodate for extra costs associated with credit-bearing international experiences. Students interested in exploring funding options should discuss this with your academic department, your study abroad advisor, and Scholarships & Financial Aid. Learn about scholarships and financial aid available through Texas A&M, locally and national, and from affiliate providers at <http://abroad.tamu.edu/Funding>.

On Campus Engagement in International Opportunities

Students don't have to go abroad to take advantage of international opportunities offered by Texas A&M. Students who remain on campus are encouraged to participate in many options available including the following:

- Center for International Business Studies (<http://cibs.tamu.edu>)
- Corps Global Leadership Initiatives (<http://corps.tamu.edu/global>)
- Halliburton Engineering Global Programs (<http://engineering.tamu.edu/global>)
- MSC L.T. Jordan Institute for International Awareness (<http://ltjordan.tamu.edu>)

- MSC SCONA (<http://scona.tamu.edu>)
- Norman Borlaug Institute for International Agriculture (<http://borlaug.tamu.edu>)
- Public Policy Internship Program (<http://ppip.tamu.edu>)
- Scowcroft Institute of International Affairs (<http://bush.tamu.edu/scowcroft>)
- Student Organizations (<http://studentactivities.tamu.edu/app/organization>) – To find internationally focused student organizations, visit <http://studentactivities.tamu.edu/app/search/index> and search international.

Students should consult their department and college advisers for additional opportunities to engage in global education on or off campus.

OMBUDS SERVICES FOR GRADUATE EDUCATION

Ombuds Services for Graduate Education

The Graduate Ombuds Officer advocates for the fair processes of graduate education and provides equal, open access to all parties: graduate and professional students, staff, faculty, and administrators. The university is a large and complex institution, and graduate and professional students often play multiple roles (e.g., student, research collaborator, teacher, technician, and peer). Misunderstandings and conflicts can arise in any one of these roles. Having a confidential conversation with an Ombuds Officer can be a first step if you do not know where to turn. The Ombuds Officer serves as an informal, independent, neutral, and confidential resource for persons to discuss questions and concerns related to graduate education.

The Graduate Ombuds Officer is guided and informed by the Code of Ethics and Standards of Practice of the International Ombudsman Association.

The Ombuds Officer can:

- Listen, and help you achieve a greater understanding of the problem.
- Help you find information applicable to your situation and identify possible solutions to your problem.
- Explain University policies and procedures and how they apply to your specific case.
- Help you identify options for managing conflicts with colleagues, staff, faculty, and advisors.
- Help you achieve fair and equitable solutions to problems.
- Facilitate communication among people in conflict through mediation, facilitated dialogues, and the like.
- Provide other types of assistance to help you resolve a problem informally.
- Refer you to formal grievance or appeal procedures if you wish to engage in a formal process.

Contact information for Ombuds Services:

Office of Graduate and Professional Studies
ombuds@tamu.edu
<http://ogaps.tamu.edu/>

TUITION, FEES AND OTHER FINANCIAL INFORMATION

General Information

Educational expenses for the months of enrollment will vary according to the course of study. For details on the basic budget for a particular graduate or professional program, please visit <http://financialaid.tamu.edu>. Scholarships & Financial Aid considers tuition and fees, books and supplies, transportation, room and board, incidental and living expenses in the cost of attendance for programs. All tuition and fee amounts provided herein represent the most accurate figures available at the time of publication and are subject to change without notice. University Rules in place at the time of publishing are reflected here. All are subject to change. The most current information available will be maintained on the Student Business Services website <http://sbs.tamu.edu>.

Payment of Tuition and Fees

A student must meet all financial obligations to the University by the due dates to avoid late penalties. Failure to pay amounts owed may result in cancellation of the student's registration, barring future enrollment and denied issuance of official transcripts. A student who wishes to pay fees in installments can select the option on the website <http://howdy.tamu.edu>. The Emergency Tuition and Fees Loan is available to help students pay their Texas A&M University tuition and required fees. Emergency Tuition and Fees Loans are for required tuition and fees only. The online process can be accessed at <http://financialaid.tamu.edu>.

Obligation to Pay Tuition, Required Fees, Other Fees and Charges for Optional Services

By registering for classes, a student agrees to pay all tuition and required fees associated with his/her registration, optional services and other fees, whether paying in full or utilizing the installment payment option. Failure to pay tuition, fees and other charges may result in penalties, late registration fees, and/or possible cancellation of classes.

Financial Obligation for Graduating Students

According to Texas A&M University Student Rules and Chapter § 54.007 (d) of the Texas Education Code, all financial obligations to the University must be paid by the end of the semester. Failure to settle all financial obligations will result in withholding a student's diploma at graduation. Additionally, a block will be placed on the student's account which will prohibit registration in subsequent semesters and receipt of official transcripts.

Citations:

Section 14.15 of the Texas A&M University Rules states, "The student must have settled all financial obligations to the University."

Chapter § 54.007 (d) of the Texas Education Code states, "A student who fails to make full payment of tuition and fees, including any incidental fees, by the due date may be prohibited from registering for classes until full payment is made. A student who fails to make full payment prior to

the end of the semester or term may be denied credit for the work done that semester or term."

Scholarships, Grants and Loans

All scholarships, grants and loans are applied to any outstanding charges before installments are calculated.

Installments

Tuition, most required fees, room, board and parking are payable in full, or in two to four equal installments. A \$15 per semester service charge to cover the cost of handling will be assessed to each student who chooses to use the installment plan. The service charge is not refundable once a payment is made under the installment plan or after the first installment due date.

Canceling Your Registration

Once a student has registered for classes, he/she must select one course of action from the following to remain in good standing with the University:

- Pay all amounts due by the specified due date;
- Prior to the first day of classes, use the online registration system to drop all classes; or
- After the first day of classes, use the online withdrawal system to request official withdraw from the University; withdrawals must be approved through his/her college Dean's office

Following this procedure is especially important for a student who has been awarded scholarships or financial aid since the aid may automatically pay tuition and fees and cause the registration to be held even though the student has decided not to attend. Failure to drop all classes or withdraw from unwanted registration may result in grades of F or I in all courses for the semester. The student will be required to reimburse the University for scholarships and other financial aid applied to his or her account and will be held responsible for paying all fees for the semester, regardless of whether he or she attended classes.

Cancellation for Nonpayment of Tuition or Fees

The University reserves the right to cancel a registration not paid by the due date, or the official census date for a semester or summer term, to comply with state laws requiring payment of tuition and fees, to free the classroom spaces for other students, and to ensure the most efficient use of University resources.

Distance Education and Other Nontraditional Course Offerings

| Required Tuition and Fees | DE ¹ | IA ² | CE ³ | GG ⁴ | SA ⁵ |
|----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Tuition | Yes | Yes | Yes | Yes | Yes |
| University Advancement Fee | Yes | Yes | Yes | Yes | Yes |
| Cooperative Education Fee | No | No | Yes | No | No |

| | | | | | |
|-------------------------------------|-----|-----|-----|-----|-----|
| Distance Learning Fee | Yes | No | No | No | No |
| Equipment Access Fees | Yes | Yes | Yes | Yes | Yes |
| Field Trip Fees | Yes | Yes | Yes | Yes | Yes |
| Health Center Fee | No | No | No | No | No |
| International Student Services Fee | Yes | Yes | Yes | Yes | Yes |
| Laboratory Fees | Yes | Yes | Yes | Yes | Yes |
| Property Deposit | Yes | Yes | Yes | Yes | Yes |
| Recreational Sports Fee | No | No | No | No | No |
| Sponsored International Student Fee | Yes | Yes | Yes | Yes | Yes |
| University Center Complex Fee | No | No | No | Yes | No |

- ¹ Distance Education Instruction: This group includes traditional off-campus classes, all university centers and telecommunications, video and other nontraditional Distance Education Instruction delivery models.
- ² In Absentia: The traditional student who is performing individual research or completing degree requirements that do not require classroom instruction.
- ³ Cooperative Registration: Students participating in the Cooperative Education Program at Texas A&M University.
- ⁴ Texas A&M University Galveston Campus Graduate Students: Texas A&M graduate students who enrolled at College Station, but who are taking courses exclusively at Galveston.
- ⁵ Study Abroad: Students participating in the Texas A&M University Education Abroad Program.

Payment Methods

Texas A&M utilizes online statements and electronic payments in its efforts to provide timely financial information to students and to control costs. Student account payment options include:

Electronic/Online

Students can view their account and make online payments using E-Checks, American Express, Discover Card or MasterCard by selecting "Pay Bill/Manage Account" on the My Finances tab in the Howdy portal. Payments made with credit cards will incur a convenience fee charged at the time of payment. Payments made with credit cards will incur a 2.25% convenience fee minimum charge of \$3.00. Additional forms of payment accepted include personal checks, cashier's checks, wire transfers

and Pin Debit. (Please Note: Once an online payment transaction has occurred, the convenience fee is non-refundable).

Paper

- Checks – Students may still use paper checks for payments. The University reserves the right to utilize check conversion technology to convert paper checks into electronic format.
- Cashier checks
- Money orders

Cash

- Cash is not accepted.

Flywire

- All bank wire transfers are accepted using our partner, Flywire. Texas A&M University does not accept direct wire transfers and will not provide our banking information.

Returned Payments

Any payment that is rejected for payment by the paying bank, credit card company or other financial institution is subject to returned item charges of \$30 or more. Rejected payments may also result in cancellation of the student's registration and additional late registration penalties if the student is required to re-register on or after the first day of classes.

Penalties and Late Registration Fees

Late Payment Penalty

Severe penalties occur for failure to pay student account balances and installments by the specified due dates. If a payment is delinquent when a semester ends, the student will be blocked and may not receive credit for academic work performed. A student will not be readmitted to the University until all past due balances, including late charges, are paid. A late fee will be assessed for each payment not received before it is due. If a student is removed from the rolls of the University or is withdrawn for failure to pay amounts owed the University, a reinstatement fee of \$50 for Texas A&M students and \$150 for HSC students will be assessed in addition to any other late fees or penalties already incurred and must be paid before the student will be reinstated.

Late Registration Fees

A student who registers on or after the first day of classes is assessed a late registration fee of \$100 for Texas A&M students and \$200 for HSC students. A student who registers after the official census date (12th class day for fall or spring and 4th class day for summer) is assessed a late registration fee of \$200 for Texas A&M students and \$250 for HSC students. A student who adds classes after the official census date is assessed a late add fee of \$50 for Texas A&M students and \$100 for HSC students. Note: Penalties, late registration and late add fees also apply to a student who is required to re-enroll because his/her registration was canceled for nonpayment.

Use of Collection Agencies and Credit Bureau

If amounts become past due, the University reserves the right to report the account to the Credit Bureau. This will also initiate internal collection efforts and could cause the University to employ an outside collection

agency to recover the debt. If any collection efforts must be made, the student will be required to reimburse the University the fees of any collection agency, which may be based on a percentage at a maximum of 30% of the debt, and all costs and expenses, including reasonable attorney's fees the University incurs in such collection efforts if the student account becomes delinquent.

Financial Assistance Assistantships

- A graduate assistantship teaching (GAT), research (GAR), and non-teaching (GANT), is available to a qualified student on a competitive basis. Students holding graduate assistantships work an average of 20 hours per week. Most assistantships are awarded through the applicant's academic department. An applicant should contact the department head or graduate advisor concerning the availability of assistantships. The Student Employment Office posts assistantship opportunities via Jobs for Aggies.
- A graduate student (domestic or international) must register for the appropriate number of University semester credit hours to maintain full-time status during any semester (9 hours for spring and fall) or summer term (6 hours in any combination) in which they hold an assistantship. Program requirements may impose additional semester credit hour requirements for a student holding an assistantship which exceed the minimum stated above. Assistantship start and end dates must align with term/semester start and end dates, as published in the University Academic Calendar.
- According to Texas Education Code, Sec. 54.212, a teaching assistant or research assistant of any institution of higher education, and the spouse and children of such a teaching assistant or research assistant, is entitled to register at a state institution of higher education by paying the tuition, fees and other fees or charges required for Texas residents under Section 54.051 of this code, without regard to the length of time the assistant has resided in Texas, if the assistant is employed at least one-half time in a teaching or research assistant position which relates to the assistant's degree program under rules and regulations established by the employer institution. Transferred and re-designated from Education Code, Section 54.063 by Acts 2011, 82nd Leg., R.S., Ch. 359, Sec. 1, eff. January 1, 2012.

Fellowships

Graduate students awarded fellowships are not required to perform any services. Therefore, a fellowship student is not considered an employee and federal employment regulations do not apply. A graduate student (domestic or international) holding a fellowship administered through the Office of Graduate and Professional Studies (except for the TAMU Dissertation Fellowship) must register for a minimum of:

- 9 semester credit hours during a fall or spring semester;
- 6 hours in any combination for summer.

Outside entities who administer fellowships, colleges and/or departments may adhere to the same or exceed the minimum semester credit hour requirements stated above. A course Q-dropped prior to the 12th class day does not count toward the certification of enrollment status. A graduate student concurrently holding a fellowship with a one-quarter time assistantship normally has the same registration requirements as a student holding a one-half time assistantship.

Many competitive fellowships of \$1,000 or greater per academic year also allow students to pay tuition at the in-state rate. Fellowship packages vary from \$1,000 to over \$30,000, and some include funds for insurance, tuition, and fees.

Changes in Status that Impact Financial Assistance

Dropping or Q-dropping a course affects a student's enrollment status.

In turn, enrollment status may impact certain funding sources. The following document describes these impacts. **ALL international and domestic graduate students should refer to the text below for detailed information regarding this important issue.**

- **Enrollment Status** – A student's enrollment status continues to be adjusted throughout the semester when a student drops or Q-drops a course. However, in most cases, the change in status has minimal impact, depending on timing or recent changes in laws. The impact is primarily on student loan repayment. Federal financial aid can only be paid for courses included in the student's degree plan. Enrolling in courses not on the degree plan may result in reduced financial aid eligibility.
- **Health Insurance** – In the past, students often needed to maintain full-time enrollment to continue to be covered under their parents' health insurance policy. With the implementation of the Affordable Care Act (ACA), that is no longer required. A dependent can now be covered under their parents' insurance plan until the age of 26 regardless of their enrollment status as a student.
- **Financial Aid & Scholarships** – Timing matters on when a student drops a course. Financial aid checks enrollment status on two occasions – when a student's aid is released to their billing account and on 12th class day of a Fall or Spring semester. A student's aid amount can be adjusted if the student's enrollment status changes between the time funds are disbursed to the billing account and the 12th class day. However, after the 12th class day, enrollment status is not a factor for aid that has already disbursed and instead any changes in enrollment status will be reviewed through financial aid's satisfactory academic progress standards for subsequent semesters and will not impact current semester aid. If aid has not been disbursed prior to the 12th class day, then enrollment status is checked on the date the aid is disbursed. In the Summer semester, enrollment status is officially checked on the 5th class day of the Summer session(s) in which the student is enrolled.
- **Non-Resident Tuition Waiver Tied to Graduate Assistantship**
 - After the 20th class day, SBS will notify departments to audit graduate students who have not met all eligibility criteria. SBS will provide a deadline for departments to respond prior to removing the waiver. Departments will then audit each graduate student and provide SBS with documentation of eligibility for graduate students who are eligible for the waiver although their record in BPP and/or Compass may not reflect eligibility. Graduate students that do not meet all eligibility criteria as of the audit deadline will have their waiver removed.
 - Employment must be for the entire semester in which the student is enrolled and actual paid work must commence on or before the official census date for the term (12th class day for fall and spring, 4th class day for summer), to be eligible for a nonresident tuition waiver.
 - Must be working 50% effort in the qualifying position.

- Terms used to describe qualifying positions are intended to indicate an academic position, not a position title.
- Volunteer or unpaid work does not constitute employment.
- Student worker positions do not qualify for non-resident tuition waivers.
- **Student Loan Repayment** – Graduate students must maintain at least half-time enrollment throughout the semester for student loans to remain in an in-school deferred status. Dropping below half-time enrollment will trigger student loans to enter any applicable grace period, with repayment required after the grace period has elapsed. Changes in enrollment status from full-time to half-time have no consequence on student loans. Half-time enrollment for a graduate student is defined as 5 hours and for a professional student it is defined at 6 hours.
- **International Graduate Assistants**

The United States Department of Homeland Security and the Department of State require students on F-1 and J-1 visas/status to be enrolled in a full course of study. Undergraduate students are required to enroll for 12 semester hours per term. A full course of study at the graduate level is certified by the Designated School Official (DSO) in International Student Services (ISS). ISS uses the University's definition of full course of study for graduate students.

International students on **F-1** visas have limited reasons they can drop below full-time enrollment and maintain their immigration status. There are three basic reasons the F-1 students can below hours.

1. Medical Condition
2. Academic difficulties
3. Final Term

An F-1 student must not drop below full-time enrollment without prior approval from ISS. Without ISS approval to drop below full-time enrollment, an F-1 student will be considered **out of legal immigration status**. Students should request a reduced course load by submitting the F-1 Reduced Course Load Form (<http://iss.tamu.edu/ISS/media/ISS-Files/ISS-PDF/Current%20Students/F-1-Reduced-Course-Load.pdf>). Rules for a reduced course load are further detailed on the form.

Students on a **J-1** visa/status may have a reduced course load if

1. There is a documented medical illness
2. There is a bona fide academic reason
3. It is the final term.

A J-1 student must not drop below full-time enrollment without prior approval from ISS. Without ISS approval to drop below full-time enrollment, a J-1 student will be considered **out of legal immigration status**. Students should request a reduced course load by submitting the J-1 Reduced Course Load Form. ([http://iss.tamu.edu/ISS/media/ISS-Files/ISS-PDF/Current%20Students/J-1-Reduced-Course-Load-\(Update\)_new.pdf](http://iss.tamu.edu/ISS/media/ISS-Files/ISS-PDF/Current%20Students/J-1-Reduced-Course-Load-(Update)_new.pdf)) Rules for a reduced course load are further detailed on the form.

Scholarships & Financial Aid

The mission of Scholarships & Financial Aid is to provide students with information and financial resources to attend Texas A&M University, along with support programs that promote higher education and developmental opportunities. As a part of this commitment, we strive to provide financial solutions to students at all income levels and with varying academic, merit and leadership qualifications.

The need-based financial assistance program is designed for all students who have a demonstrated financial need, as defined by the Free Application for Federal Student Aid (FAFSA), in order to assist the student in paying college expenses. All financial aid is contingent upon student enrollment and making Satisfactory Academic Progress (SAP), as defined by Scholarships & Financial Aid or the specific aid program.

Financial aid has two forms: gift aid and self-help.

| Gift Aid | Self-Help |
|----------------------------------------|------------------------------------------------------------------------------------|
| Grants (Federal, State, Institutional) | Loans (Federal, State, Institutional Alternative) |
| Scholarships | Student Employment (Work Study, Part-time Employment, Internships, Assistantships) |
| Non-resident Tuition Waivers | |

Texas A&M University's packaging philosophy for need-based financial aid is to provide the greatest amount of gift aid to those students with the highest demonstrated need and to keep loan liability to a minimum. Financial aid is awarded on a first-come, first-served basis based on a priority date published on financialaid.tamu.edu. To apply for financial assistance, a student must submit a Free Application for Federal Student Aid (FAFSA). Students are encouraged to submit their FAFSA at <https://fafsa.gov> as soon as possible. Students who do not meet the citizenship eligibility requirements for the FAFSA may complete the Texas Application for State Financial Aid (TASFA) or the International Student Financial Aid Application (ISFAA). Only those students who have been accepted for enrollment, have a FAFSA or other financial aid application on file with Scholarships & Financial Aid, and have submitted all other requested documents will be sent a financial aid offer. Financial aid offers for students beginning in the Fall semester will be sent during the preceding Spring semester. Students starting in the Spring semester will be sent financial aid offers late in the preceding Fall semester. Summer financial aid offers are made in May to students with a FAFSA on file who enroll half-time in summer coursework at Texas A&M.

Financial aid offers are made based on the assumption that students will enroll full-time in the fall and spring semesters in courses that are part of the student's degree plan. Cost of attendance and awards will be adjusted for graduate and professional students who are enrolled less than full-time at Texas A&M University (as defined by academic program/level). Federal Aid may only be paid for eligible courses that count towards the program of study. State and Institutional Aid are not subject to the same regulatory restrictions. The cost of attendance for students will be reduced for courses that are not counting to the program of study; which can result in a lower amount of federal, state and institutional aid a student could receive. Financial aid awards may also be adjusted if a student does not begin attendance in all courses in which he or she is registered.

Student inquiries may be directed to:

Scholarships & Financial Aid

Texas A&M University
 P. O. Box 30016
 College Station, TX 77842-3016
 (979) 845-3236
financialaid@tamu.edu
<http://financialaid.tamu.edu>
 FAFSA School Code 003632

Please visit our website (<http://financialaid.tamu.edu>) for the most current information on programs and any associated deadlines.

Loan Programs

The Federal Direct Loan Programs are available to students who have submitted a FAFSA. Students will be notified of eligibility for the Direct Loan program(s) through a financial aid offer.

Graduate and professional students seeking the Federal Direct Graduate PLUS (Grad PLUS) Loan may obtain information from our website (<http://financialaid.tamu.edu>). This program also requires the FAFSA to be on file with Scholarships & Financial Aid.

Short-term loans are available to provide assistance to students who experience temporary financial difficulties with educationally related expenses. Funding for this program is provided by The Association of Former Students, the Class of 1926, and other University resources. This program is not intended to provide long-term assistance or to replace other assistance available through Scholarships & Financial Aid. Students must be degree-seeking and enrolled at least half-time in order to be eligible for short-term loans.

The Emergency Tuition and Required Fees loan program is available to help students pay their Texas A&M University tuition and required fees. The loan is applied directly to the student's tuition and fee account.

Please refer to our website (<http://financialaid.tamu.edu>) for detailed information on the aforementioned programs and more.

Scholarships

Continuing Student Scholarships

The University Scholarship Application is available to students with at least one semester completed at Texas A&M. Awards range in value from \$500 to \$1,500 and are available to undergraduate, graduate, and professional students currently enrolled at Texas A&M. Some awards are limited to certain fields of study and to individuals who have attained a necessary academic classification, while others are unrestricted. Awards are made to outstanding students based on a combination of academic achievement, campus/community involvement, campus leadership roles, and, for some scholarships, financial need. In addition to scholarships offered through the Scholarships & Financial Aid office, many colleges and departments use the University Scholarship Application for award consideration. Students are encouraged to complete the University Scholarship Application beginning in October. The deadline for submitting applications is February 1, prior to the academic year for which the student will be awarded.

For more information on Continuing Student Scholarships, visit <https://uwide.tamu.edu>

Scholarship Recipients and Non-Resident Tuition Waivers

The Non-Resident Tuition Waiver for Competitive Scholarship Recipients, authorized under the Texas Education, is an optional waiver that institutions can implement. An eligible non-resident student who holds a

competitive academic scholarship of a specified minimum dollar amount for the academic year or summer for which the student is enrolled may be eligible to pay the fees and charges required of Texas residents without regard to the length of time the student has resided in Texas. The student must have competed with other students, including Texas residents, for the scholarship and the scholarship must be awarded by a Texas A&M University college or departmental scholarship committee or university representative.

More information is available at <https://u.tamu.edu/NonResScholarshipWaiver>

For additional information on scholarships, please visit <https://scholarships.tamu.edu/> or email scholarships@tamu.edu.

College/Departmental Level Scholarships

A number of colleges and departments at the University award scholarships to students interested in particular major fields of study on the basis of academic record, service, activities, and demonstrated leadership. The value of the awards vary, and the term of scholarships range from one to four years. Awarding college and department select recipients based upon pre-determined criteria. Completed scholarship applications must be received no later than specified deadlines. Awards are typically announced mid-spring for the following academic year. For more information, please visit <https://u.tamu.edu/CollegeDepartmentScholarships>

For additional information, please visit scholarships.tamu.edu or email scholarships@tamu.edu.

Student Part-Time Employment

In addition to the assistantships and fellowships offered by academic departments and coordinated by OGAPS, the Student Employment Office in Scholarships & Financial Aid coordinates student part-time employment, both off- and on-campus in the Bryan/College Station area. Students may visit the online job database. Work Study, assistantships and other part-time positions are posted. Students secure their own employment through job leads provided by Scholarships & Financial Aid or through their own initiative.

On-campus student employees are paid minimum wage or higher and are paid bi-weekly along with regular University employees. University student employees are not eligible for paid holidays, retirement, vacation, nor sick leave.

Professional development workshops are also available for student employees and supervisors of student employees. These free workshops include topics ranging from communication skills to preventing sexual harassment in the workplace and from customer service to workplace etiquette. For more information or to register, please visit the Jobs for Aggies (<http://jobsforaggies.tamu.edu>) website or call (979) 845-0686.

The Money Education (ME) Center

The Money Education (ME) Center provides Aggie students with the education and resources they need to make smarter personal finance decisions during college so that they can lay a foundation of financial success for a lifetime. Through the following resources, the ME Center teaches Aggies about budgeting, saving and banking, building and protecting credit, investing, buying a car and home, and more. Services and resources provided by the ME Center include:

- Foundations of Money Education Course
- Scheduled Appointments

- Walk-in Advising
- Scheduled Presentations
- Class Presentations
- Student Group Presentations
- Resource Tables
- Online Resources

To learn more about these free resources, visit money.tamu.edu or contact money@tamu.edu.

Texas A&M Tuition and Required Fees

All rates are the most current available at the time of printing and are subject to change.

Graduate Tuition

A tuition calculator is provided on the Student Business Services website to assist students in estimating their tuition and fee costs based on enrolled semester credit hours. Tuition and fee explanations can also be found at sbs.tamu.edu.

Nonresident Tuition Exemption

If you have any questions regarding your eligibility for exemption from non-resident tuition, you may contact Student Business Services at (979) 847-3337 or your department.

University Advancement Fee

The University Advancement Fee is a required fee charged to all Texas A&M University students. The University Advancement fee funds services such as advising, the Career Center, Writing Center, technology and libraries as well as administrative services such as ID services, the campus bus system, billing and refunds, access for students to discounted software and many of the services provided through the Division of Student Affairs.

College Advancement Fee

The College Advancement fee is a required fee that is charged to graduate students per semester. The College Advancement Fee amount will be added to the existing college-wide program fee already charged for the college for Architecture and Bush School. The College Advancement Fee replaces approximately 7200 course fees.

Distance Education Tuition & Fees

A student registering for distance education courses will be assessed Distance Education Differential Tuition per hour based on the course(s) being taken. Each course has a different Distance Education Differential Tuition based on the fees associated with that program. An administrative fee of \$30 per hour and a Distance Education Teaching Fee (equal to and in place of non-resident tuition) are assessed for those non-resident students taking distance education courses outside the State of Texas.

Distance Education Differential Tuition

The rate to be charged for distance education courses will range from a minimum of \$40/SCH to a maximum of \$550/SCH. Each academic department will have an individual rate that will be approved annually by the President of Texas A&M University. For more information regarding

Distance Education Differential Tuition, please visit http://sbs.tamu.edu/accounts-billing/tuition-fees/schedule/#DIST_ED_DIFF.

Distance Education Administration Fee

This \$30 per semester credit hour administrative fee is assessed to Non-Funded Out-of-State students taking distance education courses.

Field Trip Fees

Field trip fees are assessed to cover the cost of providing trips and vary depending on the course taken and expected expenses.

Health Center Fee

There is a \$75.00 per semester fee (\$25 for a 5-week summer term and \$75.00 for a 10-week summer term) that is included in tuition and fees for students intended to support operations of the Student Health Center. This allows the Health Center's fee schedule to be as low as possible. Students pay a visit fee each time they access care, and there are charges for on-site medical tests, procedures, medications and ancillary services.

Identification Card (Aggie Card) Fee

Every student is required to have a student ID card. An ID card is permanent and a student is responsible for maintaining a working ID throughout his/her career at the University. The Aggie Card is used for residence hall access, registration, fee collection, financial aid disbursement, dining halls, athletic event and recreational sports admittance and library privileges. Replacement ID cards are \$12.

A student who loses his/her IDs should report the loss immediately online at <https://myaggiecard.tamu.edu/> and deactivate the card or contact:

Student Business Services
Aggie Card Office
General Services Complex
(979) 845-4661
24 hours a day, seven days a week

International Student Orientation Fee

This \$35 fee is charged to cover the cost of new student programming for newly admitted or returning international students.

International Student Services Fee

This \$85 fee is required of all students who are not U.S. Citizens or Lawful Permanent Residents to offset the cost of specialized services provided to these students from International Student Services, Center for Teaching Excellence - English Language Proficiency Program, and the Writing Center.

Laboratory Fees

The University is required to assess and collect a laboratory fee not to exceed \$30 for each laboratory course to cover in general the cost of laboratory materials and supplies used by a student.

Late Penalties

A student who fails to pay fees and installments when due is assessed a \$25 late payment fee for each payment or installment paid late.

Late Registration/Add Penalties

- A student who registers on or after the first day of classes, but before the 13th day of classes is assessed a \$100 late registration fee.
- A student who registers after the 12th class day is assessed a \$200 late registration penalty.
- A student who adds classes after the 12th class day that result in a net increase in hours enrolled is assessed a \$50 late add fee.

Recreational Sports Fee

This \$106 per semester fee (\$53 for a 5-week summer term and \$106 for a 10-week summer semester) is assessed to all students attending the University for use of the Student Recreation Center.

Reinstatement Fee

A student who fails to pay all fees by the last day of the semester will be administratively withdrawn from the University and charged a \$50 reinstatement fee.

Student Center Complex Fee

This \$100 fee (\$50 for a 5-week summer term and \$100 for a 10-week summer semester) is required of all students for operating, maintaining, improving and equipping the Student Center Complex.

HSC Tuition and Required Fees

Texas A&M University Health Science Center tuition and fees are approved by The Texas A&M University System Board of Regents within guidelines established by the Texas Legislature. Fees are subject to change by the Board of Regents.

A tuition calculator is provided on the Student Business Services website to assist students in estimating their tuition and fee costs based on enrolled semester credit hours. Tuition and fee explanations can also be found at www.sbs.tamu.edu.

Distance Education Administration Fee

This \$30.00 per semester credit hour administrative fee is assessed to Non-Funded Out-of-State students taking distance education courses.

Field Trip Fees

Field trip fees are assessed to cover the cost of providing trips and vary depending on the course taken and expected expenses.

Group Hospital Fee

The group hospital fee supports the provision of medical services to students to access services at the academic locale.

Instructional Enhancement/ Equipment Fee

The Texas A&M Health Science Center charges an Instructional Enhancement Fee (IEF) at each of the colleges offering HSC academic programs. The colleges have varying fee rates based on the IEF needs of the college. This fee supports an array of educational activity enhancing academic programs at the college. A few examples of enhancement expenditures are; software to enhance education, media, web-based instruction, tracking and evaluation tools, licensure fees, and integration of technology.

Publication ASDA/ ADHA Fee

This fee provides for students to receive a monthly publication, annual membership into the ASDA, ADA, or ADHA, and many leadership opportunities depending on the student's academic program.

ID Card (1-time flat rate)

This additional ID fee covers the College of Dentistry badge, which also serves as an access card to secure locations of the dental school in addition to being an identification card.

Matriculation Fee (1-time flat rate)

This is a setup fee for first-year dental students related to a college-specific file set up with the college.

Drug Testing Fee (1-time flat rate)

All dental students pay this fee to cover drug testing for students, and this is a one-time assessment.

Lab Fee

The University is required to assess and collect a laboratory fee not less than \$2 nor more than \$30.00 for each laboratory course to cover in general the cost of laboratory materials and supplies used by a student.

Medical Liability

Medical Liability Insurance is required by students interacting & treating patients. This fee covers medical malpractice required for this type of activity.

Equipment Usage

This fee supports costs associated with the instruments used during dental education.

Summer Clinic Fee (*D3 and D4 only*)

The Summer Clinic Fee is used to partly cover the cost of students working in the clinic, this fee is a flat fee and isn't charged by the hour. (The students are scheduling and working on patients as part of their clinical training.)

Clinical Simulation Fee

This fee covers costs associated with Clinical Learning Resources Center to include specialized simulation technology, equipment, materials and supplies related to the operating of the simulation center.

Gross Anatomy Fee (*M1 Only*)

This fee covers costs associated with Gross Anatomy lab to include lab materials, supplies, furnishings, software and equipment specific to gross anatomy

Professional Liability Fee

Professional liability insurance coverage is required of all students who will be in clinical settings providing patient care. It is a mandatory requirement of all local facilities with which we have contracts for student clinical experiences.

Clinic Simulation Fee

This fee covers costs associated with Clinical Learning Resources Center to include specialized simulation technology, equipment, materials and supplies related to the operating of the simulation center.

Professional Activity Fee

The Professional Activity Fee supports various professional activities for pharmacy students such as participation in clinical partnerships enhancing experiential education, financial resources to ensure these clinical experiences meet pharmacy education expectations, support of student travel to professional meetings/conferences, and other professional activities.

Professional Development Fee

One-third of the pharmacy curriculum is experiential education, which consists of the Introductory Pharmacy Practice Experiences (IPPE) and the Advanced Pharmacy Practice Experiences (APPE). This fee supports clinical site payments for student rotations. In addition to clinical site payments, the Professional development Fee supports service learning activities and other professional development services and programs.

Environmental Service Fee

This fee supports distribution, maintenance and pickup of recycle bins and materials from each building located on the Texas A&M University-Kingsville campus. Only pharmacy students located at Kingsville are assessed this fee.

Career Services & Professional Services Fee

This fee will support efficient and effective support services for professional career development services. Various operational costs associated with provisions of professional career development services.

Advising Services Fee

This fee will provide advising support services for all graduate degree programs not provided by members of the faculty. This fee includes, but is not limited to Graduate Studies, Professional School Advising, and Admission Services related to student enrollment. Various operational costs associated with the delivery of services noted in programmatic justification.

Transportation Fee

This \$70 per semester fee (\$35 for a 5-week summer term and \$70 for a 10-week summer semester) is assessed to provide unlimited fare-free access to all students to on-campus and off-campus services, and expanded service and revenue for a long-term bus replacement plan. In addition, revenue will pay for operating expenses and the enhancement of bus facilities on campus. Fee subject to change.

Optional Campus Services

Athletic Events

Sports Pass are available for purchase. For more information, please visit <http://mysportspass.tamu.edu>.

Campus Dining

Freshmen (classified as U1s with less than 30 hours of college credit when they initially apply to live on campus) will be required to have a minimum dining plan for the full academic year (or remainder of the academic year for those that apply for housing after the beginning of the fall semester).

All Corps of Cadets members are required to have a dining plan, as designated by the Office of the Commandant.

Upperclassmen and students who are not campus residents are not required to purchase a Dining Plan, but the option is available.

All Dining Plans are loaded onto the Student ID card to make access and use easy.

Fees for the selected meal plan will be added to your Texas A&M University student fee, and are separate from housing fees. Any plan purchases or additions made after the ninth week of class cannot be charged to the student's account and must be paid via credit card. Please visit our website for official date as it may vary each semester based on the academic and billing calendars.

Students have the option to select a Dining Plan that fits their individual needs. Dining Plans are designed to be flexible for an array of lifestyles and appetites. Smaller Dining Plans are available for upperclassmen and students who live off campus. Most Dining Plans include 2 parts: First, "Meals," which can be used at the all-you-care-to-eat dining halls, or in select retail locations as a "meal trade." The second part of the dining plan consists of "Dining Dollars." These declining balance dollars can be spent like cash or a debit card, and are accepted at all University Dining kiosks, coffee shops, food courts and dining centers. Each purchase is automatically deducted from the account.

When paying with Dining Dollars, patrons will enjoy a discount on the door rate at Duncan, Sbisá, and The Commons, the all-you-care-to-eat dining halls on campus.

Dining Dollars roll over from fall to spring with the purchase of a spring dining plan.

Dining Dollars are only accepted on campus, assuring parents and guardians that this money is spent only on food and beverages.

Applicable sales tax will be added at checkout.

Housing

Housing in residence halls may not be available for graduate students except during summer school. Summer school housing information is normally available in early March. However, many graduate students request to live in our University apartments all year long. For more information, please visit <http://reslife.tamu.edu/apartments>.

For more information please contact:

University Apartments
 Department of Residence Life
 Texas A&M University
 3365 TAMU
 College Station, TX 77843-3365
 (979) 845-2261
 Fax (979) 862-2605
university-apartments@tamu.edu
<http://reslife.tamu.edu>

For summer school housing please contact:

Housing Assignments Office
 Department of Residence Life
 Texas A&M University
 1258 TAMU
 College Station, TX 77843-1258
 (979) 862-4744 or 1-888-451-3896
 Fax (979) 862-3122
housing@tamu.edu
<http://reslife.tamu.edu>

Installment Payment Option

A student who chooses to pay using the installment plan pays a \$15 installment payment service charge. This charge is non-refundable. You may add the installment plan by selecting the installment option through the online registration system at <https://howdy.tamu.edu>.

Parking Permit

Vehicles parked on the Texas A&M University campus are required to display a valid parking permit or pay by the hour to park in designated visitor areas. Costs of permits are prorated and subject to change.

For more information or to purchase a permit, visit transport.tamu.edu/permitreg.

| | |
|---------------------------------------------------|-------|
| Surface Lot | \$319 |
| Night Permit (only valid 5pm - 6am) | \$102 |
| Garage Non-Reserved Space | \$515 |
| Motorcycle Permit - including mopeds and scooters | \$102 |

Student Directory

The cost is \$4.00 and includes sales tax.

Yearbook

The cost is \$81.19 including shipping and sales tax.

Fees for Other Special Items or Services

Application Fees

Graduate: \$50; Undergraduate: \$75; International: \$90.

Cooperative Education Fee

A fee of \$75 is charged to all students participating in domestic or international Cooperative Education programs.

Diploma/Graduation Fee

A non-refundable fee per degree sought is assessed the semester a student applies for graduation. This fee is payable each time a student applies for graduation. A late fee of \$50, in addition to the diploma/graduation fee, may be charged to those who apply for graduation after the published deadline.

Independent International Study Fee

The \$100 fee covers services provided by Education Abroad Programs associated with students who elect to go abroad and transfer credit back to Texas A&M. Such services include advising students and departments on key issues and procedures before, during and after programs abroad; overseeing transfer credit paperwork; maintaining the library and computer resources for those who want to pursue independent opportunities abroad; and overseeing issues related to affiliated programs abroad and emergency services to assist students as needed.

International Student Health Insurance

The Texas A&M University System requires all international students entering the U.S. on a F-1 or J-1 student visa to be covered under the Texas A&M University System Student Health Insurance Plan (SSHIP) or have equivalent insurance coverage that meets the waiver criteria at <http://assets.system.tamus.edu/files/benefits/pdf/studentinsurance/waiver%20guidelines.pdf>. The System Student Health Insurance Regulation is located at <http://policies.tamus.edu/26-99-01.pdf>.

For more information regarding the health insurance and waiver processes, please visit <http://iss.tamu.edu>.

Bush School Graduate Program Fee

The fee structure is \$1,548 per semester.

Master of Real Estate Program Fee

The fee structure is \$3,000 per semester for each fall and spring semester. It will be used to further enhance the MRE program through the support of career services, student advising, curriculum development, and enrichment experiences.

Mays MBA Program Fee

The fee structure is \$14,000 per semester. The fee is used to support the MBA Program office, Graduate Business Career Services, and the various activities of the Mays MBA Program.

Mays Masters' Program Fee

The fee structure is \$2,200 per semester for each fall and spring semester and \$200 for each five-week summer session. The fee supports the Graduate Business Career Services office and other placement and admission resources for Mays Masters students.

Master of Science Finance Program Fee

The fee structure is \$10,700 per semester. This fee supports all activities surrounding the Master of Science-Finance degree.

Master of Financial Management Program Fee

The fee structure is \$500 per semester (Fall and Spring). This fee supports all activities surrounding the Master of Financial Management degree.

Master of Science Human Resource Management Program Fee

The fee structure is \$3,000 per semester (Fall and Spring). This fee supports all activities surrounding the Master of Science- Human Resource Management degree.

Master of Science Management Information Systems Program Fee

The fee structure is \$1,500 per semester (Fall and Spring). This fee supports all activities surrounding the Master of Science- Management Information Systems degree.

Master of Science Marketing Program Fee

The fee structure is \$2,500 per semester (Fall and Spring). This fee supports all activities surrounding the Master of Science- Marketing degree.

Master of Science Business (for non-business majors) Program Fee

The fee structure is \$6000 per semester (Fall and Spring) and \$4000 per Summer Semester. This fee supports all activities surrounding the Master of Science-Business (for non-business majors) degree.

Master of Agribusiness Program Fee

The fee structure is \$1,000 for each fall and spring. This fee supports all activities surrounding the Master of Agribusiness degree.

Master of Science in Economics Program Fee

The fee structure is \$3,000 per semester. This fee supports all activities surrounding the Master of Science in Economics degree.

Master of Science in Psychology with concentration in Industrial/Organization Program Fee

The fee structure is \$3,500 per semester. This fee supports all activities surrounding the Master of Science in Psychology with concentration in Industrial/Organization degree.

College of Architecture Graduate Program Fee

The fee structure is \$1,543.00 per semester. The fee will be charged for each of the college's graduate degree programs.

Graduate Engineering Program Fee- Remote

The fee structure is \$555.56 per hour with a cap of \$5000.00 for 9 or more hours.

Graduate Engineering Program Fee

The fee structure is \$285 per hour with a cap of \$2565.00 for 9 or more hours.

Executive Masters of Science and Engineering Systems Management Program Fee

The fee structure is \$1,100 per hour to support the program.

Masters of Industrial Distribution Program Fee

The fee structure is \$9,000 per semester. This fee is used to support all program materials, residency week, Global Distribution Program, Capstone Project and Graduation as well as a program specialist to support the planning and logistics of all activities.

Master of Science Analytics Program Fee

The fee structure is \$10,000 per semester to support the program.

Master of Science Quantitative Finance Program Fee

The fee structure is \$8,500 per semester to support the program.

Masters of GeoSciences Online Program Fee

Resident: The fee structure is \$436 per semester to support the program.

Non-Resident: The fee structure is \$254 per semester to support the program.

Law School Program Fee

The fee structure for full-time students taking 13-16 hours is \$15,627.00 (per semester) for residents, and \$19,625.40 (per semester) for non-residents. For part-time students taking 9-12 hours is \$12,157.40 (per semester) for residents and \$14,265.80 (per semester) for non-residents. Resident students taking 1-8 hours will be charged \$1,230.20 for the first hour and \$1,027.20 per additional hour per semester. Non-Resident students taking 1-8 hours will be charged \$1,498.15 for the first hour and \$1,242.15 per additional hour per semester. There will be an additional hourly charge for students taking more than 16 hours.

Public Health Graduate Program Fee

The fee structure is \$70 per hour to support the program.

Executive Masters of Health Admin Program Fee

The fee structure is \$851 per credit hour to support the program.

College of Nursing Graduate Program Fee

The fee structure is \$68 per hour to support the program.

New Graduate Student Fee

A non-refundable new graduate student fee of \$50 is charged to all new graduate students. This fee is assessed the first semester the student is registered.

Professional Program in Biotechnology Program Fee

This fee is \$530 per semester.

Sponsored International Students

International Student Services (ISS) provides specialized administrative services, advising, and other program management related to the specific requirements for sponsored students. ISS serves as a liaison with academic departments, the Texas A&M University campus, sponsored students and their sponsors.

Third Party Billing and invoices for sponsored students are handled by Student Business Services (SBS). <http://sbs.tamu.edu/accounts-billing/for-sponsors-and-sponsored-students/>

An administrative fee not to exceed \$500 per semester or summer session (all or part thereof) will be required to support international sponsored students whose programs are coordinated through International Student Services, unless these fees are waived as part of negotiated contractual agreements.

For more information, please visit the sponsored student section at <http://iss.tamu.edu>.

Thesis/Dissertation/Record of Study Fee (Processing Fee)

This fee includes the review, processing and archiving of each thesis/dissertation/record of study, along with other services provided by Thesis and Dissertation Services. Archival formats include microfilm or digital storage. The fee does not include binding of personal copies. Information on binding personal copies is available on the OGAPS website (<http://ogaps.tamu.edu>) in the applicable thesis/dissertation/record of study section.

Masters fee: \$110, Doctoral fee: \$170

Deposits

General Deposit

Every student must make a \$100 deposit to protect the University from damage to or loss of University property. Failure to pay promptly will bar the student from re-admission and from issuance of official transcripts from the University. This deposit, assuming there are no outstanding charges, will be returned upon the student graduating or withdrawing from school. Students leaving the University without graduating or withdrawing automatically forfeit their property deposit refund if Student Business Services doesn't receive a request for the refund. Deposits not refunded within four years from the date of last attendance will be forfeited into a student deposit scholarship account.

Room Deposit

A deposit of \$300 and a nonrefundable \$50 application fee are required to apply for a room in a residence hall or one of our university apartments.

The deposit will be retained to offset charges for damages or late cancellation, or to keep the application on an active waiting list. A reservation may be canceled and the deposit refunded upon request prior to signing a housing contract. After a housing contract has been signed for the next academic year, deposits are not refunded. Cancellations after a student has been assigned housing are subject to additional penalties.

Enrollment Deposits

To accept an admission offer into certain programs, an applicant may be required to pay a nonrefundable enrollment deposit to hold his/her seat in the class. This deposit is applied to the tuition/fees statements of students who matriculate into the program. Individuals who ultimately don't begin classes in the program will forfeit the deposit. Contact your department for additional information regarding your program's deposit policy.

Refund Policy

Allocating Returned Title IV (Federal Aid)

Funds that are returned to the federal government due to student withdrawal are used to reduce the outstanding balances in individual federal programs.

Financial aid returned (by the University and/or the student or parent) must be allocated in the following order:

1. Unsubsidized Federal Direct Loan
2. Subsidized Federal Direct Loan
3. Federal Perkins Loan
4. Direct Graduate Plus (Student) Loan
5. Federal Direct PLUS (Parent) Loan
6. Federal Pell Grant
7. Federal Supplemental Educational Opportunity Grant (FSEOG)
8. TEACH Grant
9. Other federal loan or grant assistance
10. Other state or institutional financial aid programs

State and institutional aid awards will be calculated using the same percentage proration used by Student Business Services to determine the amount of tuition and fees to be charged to a withdrawn student.

Additionally, students who do not successfully complete courses for the semester may be considered unofficially withdrawn and may be subject to a return calculation if attendance cannot be documented.

Unclaimed Refunds

According to federal law, the university is required to return Title IV funds that have not been claimed (i.e., refund check that has not been cashed) within 240 days of issue. These funds will be returned to the appropriate federal financial aid program.

Dining Plan Refunds and Add/Change/Drop Policies

Texas A&M University Dining's dining plans and options listed are based on information available at time of printing and are subject to change. University Dining follows the University's refund schedule for Tuition and Fee Adjustments. Refunds are given on the percentage basis listed

for students dropping fee options or officially withdrawing from the University.

Students may purchase a dining plan, change to a larger plan or add on to a plan during registration for classes or at any time through University Dining. Dining Plans and additions to the plans may be charged to the student account through the ninth week of school. Any purchases after that point will require a credit card payment. Changes from a higher dining plan to a smaller dining plan or requests to cancel/drop are permitted only through the fourth week of classes. The appropriate fee is to be paid to the Office of Student Business Services.

Dining plans are valid for one semester starting with the first day of campus move-in (as designated by the Department of Residence Life) and end after the last final exam day. Check with Dining for posted dates for dining plan access. Location hours may vary during class breaks and meal availability may exclude official University holidays.

Following University policy, no one is authorized to use or borrow a student's identification card (Aggie Card); therefore, dining plans are not transferable between students. The Aggie Card must be presented to Dining cashiers for dining plan participation. If an Aggie Card becomes lost, report it immediately by calling (979) 845-4661 or go to <http://myaggiecard.tamu.edu> to deactivate the card.

For questions and assistance, please email dining@tamu.edu (include name, UIN and instructions if dining plan related) or contact our office at (979) 845-0152. Additional information on University Dining and dining plans can be found on our website (<https://new.dineoncampus.com/tamu>) or in this catalog under Campus Dining.

Fee Adjustments for Courses Dropped

A student may drop individual courses during the first five days of a fall or spring semester (first four days of a summer term). Students also may drop individual classes with special permission of the dean between the 6th and 12th class days. Full refunds will be given for the individually dropped courses during these periods provided the student remains enrolled in at least one class and has not withdrawn from the university. Refunds will not be issued for classes dropped after the 12th class day. Any credit balance on a student account as a result of dropping courses will not be refunded until after the fifth class day. As of the first day of the semester, students may not drop all of their courses through the drop/add process, but instead must begin the official withdrawal process online through Howdy (<https://howdy.tamu.edu>) (see **Withdrawal from the University** below for additional information regarding the withdrawal process). A student may add courses during the first five days of a fall or spring semester.

Reductions in Rates for Late Entry to the University

No reduction will be made in the charge of room rent and board in case of entrance within 10 days after the opening of a semester or summer term, nor will a refund be made in case of withdrawal during the last 10 days of a semester or summer term, or the last days for which payment is made.

Refund Delivery

Texas A&M and Heartland ECSI have joined forces to deliver financial aid and other refunds to students faster through the University's refund delivery process. You will receive information from Heartland ECSI and the University at your new student conference and in your official

University email account, which will explain the process for signing up for direct deposit of refunds.

Residence Hall Rent Refund

If a student withdraws, moves off campus or in any other way terminates the housing contract, a refund of residence hall rent may be made according to the housing contract. Any changes to the rent refund schedule will be detailed in the housing contract. The academic year contract period is from the time the contract is signed to the end of the fourth week of classes in the spring semester. Exceptions to this policy may be made for students who cancel their contract for the following reasons: Texas A&M University co-op or student teaching assignment, academic restriction, graduation and medical withdrawal.

University Apartment Rent

Rent at the University Apartments is paid monthly along with any applicable electricity charges. Apartment contract terms are fully enforced for the 9 1/2 or 12-month term of the contract.

Tuition and Fee Adjustments

Tuition and fee adjustments shall be made to a student officially withdrawing from the University for charges listed below according to the following refund schedule: Tuition and Required Fees, Residence Hall Rent and Meal Plans.

1. If the student withdraws during a fall or spring semester or a summer term of 10 weeks or longer:

| | |
|-----------------------------------|------|
| Prior to the first day of class | 100% |
| During the first five class days | 80% |
| During the second five class days | 70% |
| During the third five class days | 50% |
| During the fourth five class days | 25% |
| After the fourth five class days | None |

2. If the student withdraws during a term or session of more than five weeks but less than 10 weeks:

| | |
|----------------------------------------------|------|
| Prior to the first day of class | 100% |
| During the first, second, or third class day | 80% |
| During the fourth, fifth, or sixth class day | 50% |
| Seventh day of class and thereafter | None |

3. If the student withdraws from a term or session of five weeks or less:

| | |
|------------------------------------------|------|
| Prior to the first day of class | 100% |
| During the first class day | 80% |
| During the second class day | 50% |
| During the third class day or thereafter | None |

Withdrawal from the University

Once the University has accepted payment for tuition and fees, a student is considered officially enrolled unless otherwise restricted from enrolling. Stopping payment on a check for fees or allowing the check to be

returned unpaid by the bank for any reason does not constitute official withdrawal.

Before classes begin, you may go online to Howdy (<http://howdy.tamu.edu>) and cancel your courses and options for the semester.

After classes begin, you must go through the official withdrawal process in order to cancel your registration for the semester. In Howdy (<http://howdy.tamu.edu>), go to the Student Withdrawal channel on the My Record tab to begin the online withdrawal process. Failure to complete the withdrawal process will result in forfeiture of any tuition and fee adjustments, and course work may be recorded as incomplete or failed.

Failure to follow procedures for withdrawing from the University may result in financial penalties and delays with future enrollment in the University. Once a student registers, he or she is responsible for the total fees assessed regardless of whether the installment option is used. Refund percentages are applied to total fees assessed and not the amount paid. This means that students who withdraw before paying all installments may, in the event of withdrawal, still owe the University.

International students must visit with an advisor in the International Student Services Office before withdrawing to determine if doing so will affect visa status.

Student athletes should visit with an academic advisor in the Department of Athletics before initiating the withdrawal process.

Recipients of financial assistance should visit with a Scholarships & Financial Aid advisor before withdrawing. Students receiving funds awarded by Scholarships & Financial Aid should be aware of policies (<http://financialaid.tamu.edu/Undergraduate/Maintaining-Eligibility/#2-Withdrawals>) regarding withdrawal from the University. Federal regulations require a return calculation for all students who receive Title IV student assistance at a post-secondary institution of higher education and withdraw during a payment period (semester). The length of time during which a return must be calculated is up to 60 percent of the payment period. Students withdrawing prior to 60 percent of the payment period may be required to return disbursed funds not earned. Additionally, students who do not successfully complete courses for the semester may be considered unofficially withdrawn and may be subject to a return calculation or all disbursed funds being returned if attendance cannot be documented. Eligibility for state and institutional funds may also be impacted by withdrawing from the University. Drops and withdrawals are considered unsuccessfully completed coursework when determining Satisfactory Academic Progress (<http://financialaid.tamu.edu/Undergraduate/Maintaining-Eligibility>) (SAP) and will impact completion rate.

Yearbook

Yearbook charges are refundable in full during the semester in which payment is made. Thereafter, no refunds will be made on canceled orders. Yearbooks must be picked up during the academic year in which they are published. Students who will not be on campus when the yearbooks are published must pay a mailing and handling fee. Yearbooks will not be held, nor will they be mailed, without payment of the mailing and handling fee. Refunds will not be made on books not picked up within one semester of the publication date. Refunds will not be made before 21 days from the date of payment. Refund policies contained herein reflect policies in effect at the time of publication and are subject to change.

UNIVERSITY INFORMATION

Mission Statement

Texas A&M is dedicated to the discovery, development, communication and application of knowledge in a wide range of academic and professional fields. Our mission of providing the highest quality undergraduate and graduate programs emerges from our mission of developing new understandings through research and creativity.

We prepare students to assume roles of leadership, responsibility and service to the greater good. We assume as our historic trust the maintenance of freedom of inquiry and an intellectual environment that nurtures the human mind and spirit.

We welcome and seek to serve citizens of all racial, ethnic and geographic backgrounds, in keeping with our land-grant mission of educating a broad cross-section of the state's population while meeting the challenges of our increasingly diverse, global economy.

History and Development

Texas A&M is the state's first public institution of higher education. With a student body of more than 69,300 and more than 5,200 acres on the College Station campus alone, Texas A&M is also among the nation's largest universities.

Our origins, however, are much humbler. We owe our existence to the Morrill Act, approved by the U.S. Congress on July 2, 1862, which provided for donation of public land to the states. The land was to be sold at auction, with the proceeds set aside in a perpetual fund, and the interest generated supporting a college "to teach such branches of learning as are related to agriculture and mechanical arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

In November 1866, the Texas Legislature agreed to provide for the state's land-grant college. Five years later, the Agricultural and Mechanical College of Texas was established through an act that appropriated \$75,000 for the construction of buildings and that bound the state to defray all expenses of the college exceeding the annual interest from the endowment. Proceeds from the sale of the 180,000 acres of land scrip received under the Land Grant College Act were invested in \$174,000 of Texas gold frontier defense bonds, forming a perpetual endowment for the institution. A commission created to identify a location for the college accepted the offer of 2,416 acres of land from the citizens of Brazos County in 1871, and the College opened its doors five years later.

In 1888, the faculty initiated programs of instruction at the graduate level, and in 1890, two Master of Science degrees were conferred. Initially, the Agricultural and Mechanical College of Texas emphasized graduate programs in agriculture and engineering, which were administered by a faculty committee for graduate studies. In 1898, a single Master of Science degree in horticulture was awarded, followed by a scattering of Master of Science degrees in agriculture over the next 22 years. The acceleration in the awarding of Master of Science degrees after 1920 prompted the College to establish the Graduate School in 1924, with the dean of the college serving as graduate dean.

In 1936, the Board of Directors approved "certain programs of study and research leading to the doctorate." That same year, the Academic Council established the graduate faculty, and in 1940, the first Ph.D.

was awarded. In the 1960s, the Board of Regents created programs of graduate instruction in each of the academic colleges.

In 1963, the Texas state legislature officially changed the College's name to Texas A&M University, with the "A" and "M" being a symbolic link to the school's past but no longer officially standing for "Agricultural and Mechanical."

Texas A&M underwent many other significant changes in the '60s, as well. Under Gen. Earl Rudder's administration, Texas A&M also opened its doors to African American students and formally admitted women students. Participation in the Corps of Cadets was made voluntary.

Since then, Texas A&M has become an academic powerhouse. It is one of only three Tier 1 universities in the state (along with Rice University and the University of Texas at Austin). Texas A&M was designated a sea-grant institution in 1971 and a space-grant institution in 1989, making it among the first four universities to hold this triple distinction, and one of only 17 nationwide.

In 2001, Texas A&M became a member of the Association of American Universities, which is restricted to the 62 top public and private institutions of higher learning in the United States and Canada. In 2004, the Kappa of Texas Chapter of Phi Beta Kappa was installed at Texas A&M.

As the State of Texas has grown, so has the University. Today, women comprise nearly half of the student body of 68,000, and membership in the Corps of Cadets is more than 2,500, the largest it has been in decades. Historically, the Corps of Cadets has produced more officers than any other institution outside the military academies. The George Bush Presidential Library and Museum opened in 1997, making Texas A&M one of only a few universities to host a presidential library.

Texas A&M has a presence in 250 of the state's 252 counties through its extension agencies, and also has two branch campuses: a marine campus in Galveston, and an engineering campus in the Middle Eastern country of Qatar (fully funded by the Qatar Foundation). The university has research expenditures of more than \$892 million, ranking it 16th nationally by the National Science Foundation.

Classified by the Carnegie Foundation as a Research Intensive University, Texas A&M embraces its mission of advancing knowledge and human achievement, helping to drive the economic engine of the state and nation, and preparing students to be life-long learners and leaders in today's knowledge-based, global society.

Texas A&M's focus on excellence and innovation in teaching, research and service has led to rankings among the nation's top universities. Texas A&M today seeks even greater preeminence among the nation's top public universities, while continuing to respect the history and traditions that set us apart.

Student Learning Outcomes

Student learning outcomes summarize the knowledge and skills Texas A&M expects students to gain during their educational experience as Aggies. These learning outcomes ask students to connect their course- and degree-level learning to their overall goals as they take on leadership positions in their professions and communities, and prepare them to engage in learning for a lifetime.

First and foremost, Texas A&M expects students to have mastered the material presented in their individual courses, from entry-level general education courses required of all undergraduates, to capstone courses restricted to seniors in a major, to specialized graduate seminars.

The broader institutional student learning outcomes ask students to connect the pieces of their education into a whole that synthesizes what they have learned. Students graduate not only knowing facts and understanding basic concepts, but also demonstrating an ability to apply and explain those facts and concepts creatively in new situations. Through this process, students gain the skills and knowledge that allow them to thrive in our complex world.

Master's

A student who graduates from Texas A&M with a master's degree will:

- Master degree program requirements, including theories, concepts, principles and practice, and develop a coherent understanding of the subject matter through synthesis across courses and experiences.
- Apply subject matter knowledge in a range of contexts to solve problems and make decisions.
- Use a variety of sources and evaluate multiple points of view to analyze and integrate information and to conduct critical, reasoned arguments.
- Know how to communicate effectively.
- Use appropriate technologies to communicate, collaborate, conduct research and solve problems.
- Develop clear research plans and conduct valid (data-supported), theoretically consistent and institutionally appropriate research.
- Choose ethical courses of action in research and practice.

Doctoral

A student who graduates from Texas A&M with a doctoral degree will:

- Master degree program requirements, including theories, concepts, principles and practice; develop a coherent understanding of the subject matter through synthesis across courses and experiences; and apply subject matter knowledge to solve problems and make decisions.
- Apply a variety of strategies and tools, use a variety of sources and evaluate multiple points of view to analyze and integrate information and put forth critical, reasoned arguments.
- Communicate effectively.
- Develop clear research plans, conduct valid, data-supported, theoretically consistent, and institutionally appropriate research and effectively disseminate the results of the research in appropriate venues to a range of audiences.
- Use appropriate technologies to communicate, collaborate, conduct research and solve problems.
- Teach and explain the subject matter in their discipline.
- Choose ethical courses of action in research and practice.

UNIVERSITY POLICIES

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Academic Common Market

The purpose of the **Academic Common Market (ACM)** (<http://www.sreb.org/academic-common-market>) is to share specified academic degree programs between states located at southern public colleges and universities. This is accomplished through an exchange of students across borders at in-state rates. The motivation for this cooperation continues to be:

1. eliminating unnecessary duplication among the states, in that it is impractical for any institution or single state to develop or maintain degree programs in every field of knowledge,
2. to support existing degree programs that have the capacity to serve additional students, and
3. to provide access and encourage movement across state lines for programs not available in a student's home state.

ACM Overview

1. Be a resident of one of 15 participating SREB states.
2. Student learns of the ACM and makes contact with SREB or state coordinator to determine eligible programs. **Please note that Texas participates in the ACM only at the graduate level (master's, doctoral, and related degrees) for both in-state and out-of-state students.**
3. Student applies for and is accepted to an ACM-approved program.
4. Student applies for certification of residency through their home state coordinator.
5. State coordinator certifies student and notifies institution.
6. Institution grants in-state status or waiver for out-of-state fees.

Texas Residents

Texas residents (<http://www.thecb.state.tx.us/apps/programinventory/DESearchForm.cfm>) looking to study out of state, the first step is to confirm that a comparable program at the same degree level is not already offered at a Texas public university. Visit this site to search for degree programs in Texas:

<http://www.thecb.state.tx.us/apps/programinventory/ProgSearchForm.cfm>

If there are no programs at Texas public institutions that have at least 50% comparable required coursework, then graduate student can apply for the ACM by following instruction at the Texas ACM Website (<http://www.thecb.state.tx.us/index.cfm?objectid=89DEE610-1C09-11E8-BC500050560100A9>).

General information about the Academic Common Market can be found at the SREB Website (<http://www.sreb.org/academic-common-market>). For specific questions about Texas participation, send an email to ACMrequests@thecb.state.tx.us or call Jessica Acton at (512) 427-6214

Residents of Other Participating States

Residents looking to study at Texas A&M should contact the ACM coordinator at student's home institution or home state. The contact information for each participating state can be found on the SREB website (<http://home.sreb.org/acm/participating/institutionstates.aspx>).

Once the student is approved, the Texas State Coordinator will communicate with the Texas A&M ACM Coordinator who arranges with the appropriate institution officials.

A detailed list of approved TAMU programs, concentrations, and eligible states is available at SREB Website. (<http://home.sreb.org/acm/choosestate.aspx>) A summary of the approved TAMU programs is given below.

ACM list of approved Texas A&M University programs

- Master of Science in Animal Breeding
- Master of Arts in Anthropology
- Doctor of Philosophy in Anthropology
- Master of Arts Conservation Archaeology in Anthropology
- Master of Arts Nautical Archaeology in Anthropology
- Doctor of Philosophy Nautical Archaeology in Anthropology
- Master of Architecture in Architecture
- Master of Science in Architecture
- Doctor of Philosophy in Architecture
- Doctor of Philosophy in Geography
- Master of Science in Geophysics
- Doctor of Philosophy in Geophysics
- Master of Science in Land Development
- Master of Engineering in Nuclear Engineering
- Master of Science in Nuclear Engineering
- Doctor of Philosophy in Nuclear Engineering
- Master of Engineering in Ocean Engineering
- Doctor of Philosophy in Ocean Engineering
- Master of Science in Oceanography
- Doctor of Philosophy in Oceanography

- Master of Marine Resources Management in Marine Resources Management
- Master of Science in Master of Real Estate Program
- Master of Science in Athletic Training
- Doctor of Philosophy Educational Technology in Education Psychology: Learning Sciences
- Master of Wildlife Science in Wildlife Science
- Master of Health Administration in Health Policy and Management

Academic Common Market Electronic Campus Program

The ACM/EC enables students to pursue eligible degree programs via distance or e-learning without leaving their home state, work and other commitments.

ACM/ED Overview

Residents of 15 SREB states may participate in the SREB Academic Common Market Electronic Campus program. States and students alike enjoy significant savings. States do not have to provide costly, specialized programs that are available to their residents through initiative, and students who enroll in other states' programs do not have to pay the higher out-of-state tuition rates.

Academic Common Market Electronic Campus waivers of out-of-state tuition are available only if certain conditions are met:

- No public college or university in the student's home state (state of residence) offers a degree program in his or her chosen field of study.
- The program is available in another SREB state that participates in the ACM/EC.
- The program is available through distance learning.
- The student meets admissions requirements of the college or university that offers the program.
- The student is certified as a resident of his or her home state.

View online programs available to residents in your state. (<http://www.thecb.state.tx.us/apps/programinventory/DESearchForm.cfm>)

Review the programs available in the ACM Electronic Campus (<http://home.sreb.org/acm/participating/institutionstates.aspx>)

The approval process is the same as stated above for ACM.

ACM/EC list of approved Texas A&M University Programs:

- Graduate Certificate in Advanced International Affairs
- Graduate Certificate in Homeland Security
- Graduate Certificate in Statistics
- Master of Engineering in Petroleum Engineering

Aggie Honor Code

Integrity is a fundamental core value of Texas A&M University. Academic integrity requires a commitment by all faculty, students, and administrators to:

- Remain constantly focused on the quality of the academic programs;
- Achieve and maintain academic excellence in all courses and programs to assure the value of Texas A&M University degrees;
- Demand high academic standards from all members of the Aggie community.

All Texas A&M University students, graduate and undergraduate, part-time or full-time, in residence or in distance education, are expected to follow the guiding rule of the Aggie Honor Code:

"An Aggie does not lie, cheat, or steal or tolerate those who do."

Upon accepting admission to Texas A&M University or one of its branch campuses, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. A student will be required to state his/her commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M community from the requirements or the processes of the Honor System.

The Honor System Office is charged with promotion of the honor code and administration of academic misconduct cases. The Honor Council, comprised of students and faculty from colleges and offices across the University, will investigate all such infractions of the honor code and recommend appropriate sanctions. The website, <http://aggiehonor.tamu.edu>, defines the types of infractions and the possible consequences. Students are urged to review this information.

In addition to adherence to the Honor Code, a student (graduate students in particular) who is completing a thesis, record of study, dissertation, and publication may fall under the additional federal requirements promulgated by the Office of Research Integrity (Scientific Misconduct Regulations — 42 CFR part 50), as well as Texas A&M System Regulations and Texas A&M University Rules (Texas A&M System Regulations — Ethics in Research, Scholarship and Creative Work — 15.99.03 (<https://www.tamus.edu/legal/policy/policy-and-regulation-library>), and Texas A&M University rules and standard administrative procedures — Responsible Conduct in Research and Scholarship — 15.99.03.M1, 15.99.03. M1.01-06 (<http://rules-saps.tamu.edu/TAMURulesAndSAPs.aspx#15>)).

Contact information for each campus can be found at the following:

- Texas A&M University website - <http://aggiehonor.tamu.edu>
- Texas A&M at Galveston website - <http://www.tamug.edu/honorsystem>
- Texas A&M at Qatar website - <https://www.qatar.tamu.edu/students/academic-services/aggie-honor-system>

Aggie Honor System Office

<http://aggiehonor.tamu.edu>

All Texas A&M students, graduate and undergraduate, part-time or full-time, in residence or in distance education, are expected to follow the guiding rule of the Aggie Honor Code: "An Aggie does not lie, cheat, or steal or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Aggie Honor System Office (see <http://aggiehonor.tamu.edu>). Students may be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M community from the requirements or the processes of the Aggie Honor System Office.

Cooperative Graduate Programs

Texas A&M University has executed Memoranda of Agreement establishing cooperative graduate programs with the following universities: Texas A&M International University, Texas A&M University-Corpus Christi, and Texas A&M University-Kingsville. Details concerning the cooperative graduate programs are available from the graduate offices of the institutions involved.

English Language Proficiency Requirement

All international graduate students whose native language is not English must meet minimum English proficiency standards.

To achieve admission, international graduate students must attain English proficiency verification.

To become eligible to teach in positions such as Graduate Assistant-Teaching, Instructor, Lecturer, etc., the State of Texas Education Code (Section 51-917) requires that international graduate students attain English proficiency certification.

Citizens of certain English-speaking countries are exempt from the verification requirement. Refer to the list on the Office of Admissions (<http://admissions.tamu.edu/international/graduate>) website.

Refer to the Office of Graduate and Professional Studies website for more information regarding English Language Proficiency (<http://ogaps.tamu.edu/New-Current-Students/English-Language-Proficiency>) requirements.

English Proficiency **Verification** can be attained using the following:

- a TOEFL score of at least 80 on TOEFL iBT (550 paper-based), or
- an IELTS score of at least 6.0, or
- a GRE Verbal Reasoning score of at least 146 (400 on the old scale), or
- a GMAT Verbal score of at least 22, or
- a PTE Academic score of at least 53, or
- The Office of Admissions will exempt applicants of certain English-speaking countries from the English proficiency requirement for admission and will consider these students English Language Proficiency Verified. Refer to the list on the Office of Admissions (<http://admissions.tamu.edu/international/graduate>) website.
- Acquiring alternative verification (<http://ogaps.tamu.edu/New-Current-Students/English-Language-Proficiency/Alternative-Verification-Guidelines>) during the admission process from the Office of Graduate and Professional Studies via a departmental request. An international graduate student holding a master's degree, or completing all years of a bachelor's degree or higher, from an accredited institution located in the U.S. qualifies for alternative verification.

Individual colleges or departments may choose to establish test standards that exceed the University minimums listed above. Scores from TOEFL, IELTS and PTE examinations administered more than two years before submission of the admissions application are not eligible for use in attaining English proficiency verification.

International Graduate Students Serving in Teaching Positions

To become eligible to hold a teaching position at Texas A&M University such as Graduate Assistant-Teaching, Instructor, Lecturer, etc., the State of Texas requires that international graduate students attain English proficiency certification either before or after enrollment.

International graduate students who wish to serve in teaching positions can certify for English proficiency before enrollment by achieving requisite scores on the oral component of the following standardized tests: TOEFL, IELTS or PTE exams. [See chart below.] Also, departments may request alternative certification under certain conditions [See details below].

If international graduate students who wish to serve in teaching positions do not achieve requisite standardized test scores prior to enrollment, they can certify by passing the oral skills assessment of the English Language Proficiency Exam (ELPE) offered by Testing Services on the Texas A&M campus.

Eligibility levels for international graduate students serving in teaching positions:

Level 1: Students eligible for teaching assignments

Level 2: Students conditionally eligible for teaching assignments for one semester only, but must simultaneously participate in Texas A&M University Center for Teaching Excellence English Language Proficiency (CTE-ELP) instruction and achieve a certifying score on the oral skills assessment of the ELPE by the end of the semester.

Level 3: Students not eligible for teaching assignment. Students should participate in spoken language training (such as those offered by TAMU CTE-ELP or other independent English language instruction providers) to assist them in meeting English language proficiency requirements.

| Level # | Global Standardized Tests | | | Locally Administered Exam (on Texas A&M campus) |
|---------|---------------------------|------------------------|----------------------|-------------------------------------------------|
| | TOEFL Speaking Section | IELTS Speaking Section | PTE Speaking Section | ELPE Oral Exam |
| 1 | 26-30 | >=8.0 | >=85 | >=80 |
| 2 | 23-25 | 7.0-7.5 | 75-84 | >=75 |
| 3 | <23 | <7.0 | <75 | <75 |

Alternative Certification for international graduate students serving in teaching positions

Departments have the option to request alternative certification from the Office of Graduate and Professional Studies on behalf of an international graduate student who wishes to serve in a teaching position.

- An international graduate student who has received a baccalaureate degree following four years of study at an accredited institution located in the U.S. qualifies for alternative certification. Texas A&M requires an official transcript submitted to the Office of Admissions denoting the degree conferral date. *Please Note: An international graduate student holding a master's degree from an accredited U.S. institution qualifies for verification but **not** certification.*

- Departments can request alternative certification for an international graduate student who is a citizen of certain English-speaking countries listed under required documents on the Office of Admissions (<http://admissions.tamu.edu/international/graduate>) website.
- All other requests for alternative certification require strong department justification. The Office of Graduate and Professional Studies will evaluate requests on a case-by-case basis.

English Language Proficiency Examination

The ELPE evaluates English skill in the area of oral communication.

Visit the Testing Services website (<http://dars.tamu.edu/Testing/> ELPE) for more information on upcoming exam dates and how to register for the English Language Proficiency Exam.

English Proficiency Certification is required by the State of Texas before a graduate student is eligible to serve as a Graduate Assistant-Teaching or any other position considered to be a teaching position (e.g., instructor, lecturer, etc.) More information regarding the English Language Proficiency Requirements may be found at English Language Proficiency (<http://ogaps.tamu.edu/New-Current-Students/English-Language-Proficiency/English-Language-Proficiency-Certification>).

First Professional Academic Appeals Panel and Process

The First Professional Appeals Panel (FPAP) will hear appeals regarding allegations of due process violations only, after all administrative processes related to (a) suspensions, dismissals, or blocks for scholastic deficiency in a student's academic program; and (b) appeals of disputes over final course grades have been exhausted in first professional programs (JD, MD, DDS, DVM, PharmD).

Texas A&M University Student Rules Part III, Section 62 (<http://student-rules.tamu.edu/rule62>) describe the First Professional Appeals Panel Process in detail. Please carefully review Section 62 (<http://student-rules.tamu.edu/rule62>) before pursuing a grievance. First professional students are also strongly encouraged to seek clarification and advice regarding appropriate grievance procedures. The Graduate (<http://ogaps.tamu.edu/New-Current-Students/Ombudsperson>) Ombuds Officer represents a valuable resource for questions regarding grievances and appeals. The ombuds officer advocates for the processes of graduate education and provides equal, open access to all parties: students, faculty, staff, and administrators.

Instructions for Securing a Hearing Before the First Professional Appeals Panel

To secure a hearing with the First Professional Appeals Panel, please follow these procedures:

Complete the Form to Request a Hearing (<http://ogaps.tamu.edu/OGAPS/media/media-library/documents/Forms/OGAPS-FPAP-Form-to-Request-a-Hearing.pdf>), indicating your intention to appeal to the First Professional Appeals Panel. This form must be completed and returned to the Office of Graduate and Professional Studies within ten (10) university business days after receiving the dean's (or designee's) letter from their Professional School notifying them of the outcome of their hearing in the Professional School in which they are enrolled.

Please direct any questions regarding graduate appeals to the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu/About>).

Graduate Academic Appeals Panel and Process

Revised 2016

The Graduate Academic Appeals Panel is governed by the most current version of Texas A&M University Student Rule 59. Rule 59 can be found on the web at <http://student-rules.tamu.edu/rule59>.

The Graduate Academic Appeals Panel will hear appeals that involve disciplinary actions stemming from unauthorized absences or final grades, the outcome of evaluation of performance on examinations, or decisions about separation (e.g., probation, suspension, dismissal, or termination) by the department, intercollegiate faculty, or the graduate advisory committee. Appeals will be heard when the student alleges that an arbitrary, capricious or prejudiced evaluation occurred. Appeals regarding requirements of departments, intercollegiate faculty, or the Office of Graduate and Professional Studies will not be heard.

The decision to request action by the Graduate Academic Appeals Panel means that:

1. the student has appealed to the department head or chair of the interdisciplinary degree program and then the dean of the college administering the student's degree, and
2. the actions recommended at each level are unsatisfactory to the student or the examining committee.

The student and/or the examining committee, through its chair, may file an appeal to the Graduate Academic Appeals Panel.

Graduate or professional students who believe that decisions about unauthorized absences or final grades, the outcome of evaluation of performance on examinations, or decisions about separation (e.g., probation, suspension, dismissal, or termination) from a Department, Interdisciplinary Degree Program, and/or College for scholastic deficiency were made on an arbitrary, capricious, or prejudicial basis may appeal such decisions through the appeals process specified in the Texas A&M University Rules (59. Graduate Academic Appeals Panel). In such appeals the burden of proof is upon the student to demonstrate that the decisions in question were arbitrary, capricious, or prejudiced.

For additional information see the Office of Graduate and Professional Studies webpage on Student Grievances and Appeals Procedures (<http://ogaps.tamu.edu/New-Current-Students/Student-Grievances-and-Appeals-Procedures>).

Intellectual Property

The ownership, management and commercialization of system-owned Intellectual Property and Tangible Research Property are set forth in System Policy 17.01 Intellectual Property Management and Commercialization. Intellectual Property will mean, collectively, all forms of intellectual property including, but not limited to, issued patents, patentable inventions, copyrightable works, trademarks, mask works, and trade secrets. The system recognizes and affirms the traditional academic freedom of its faculty and staff to publish pedagogical, scholarly or artistic works without restriction. In keeping with this philosophy, the system does not claim copyright to pedagogical, scholarly or artistic works, regardless of their form of expression, unless required by a funding or research contract. Such works include, but are not

limited to, copyrightable works of students created in the course of their education, such as dissertations, papers and journal articles. Authors of copyrightable works that are not owned by the system, its members, or another party such as a research sponsor, own the copyright in their works and are free to publish them, register the copyright, and receive any revenues which may result.

Accordingly, copyrightable works may be owned by the student/author/creator, by multiple individuals (such as a research team or co-authors of a publication), by the System, by a System member, or by another party such as a research sponsor. Factors that require consideration in determining ownership include:

1. whether or not the intellectual property was conceived or developed as a result of activities related to an individual's employment responsibilities and/or with support from University-administered funds, facilities or personnel;
2. whether or not the intellectual property was conceived or developed in the course of, or resulting from, research supported by a grant or contract with the federal government or state government or a nonprofit or for-profit nongovernmental entity; and,
3. the individual collaborators, relative contributions of each individual, and agreements among creators of the work.

It is required that the student identify in the thesis, dissertation or record of study any collaborators, contributors, and sources of financial support (unless prohibited through contractual agreements) in carrying out the research or in publications presented in the thesis/dissertation/record of study. It is also required that the student clearly indicate what the student's independent contributions were to the work. The advisory committee is responsible for ensuring that the student's independent contribution is sufficient to represent a thesis, dissertation, or record of study.

Oak Ridge Associated Universities

Since 1950, students and faculty of Texas A&M University and its branch campuses have benefited from membership in Oak Ridge Associated Universities (ORAU). ORAU provides innovative scientific and technical solutions to advance national priorities in science, education, security, and health. Through specialized teams of experts, unique laboratory capabilities and a consortium of more than 100 PhD-granting universities, ORAU works with federal, state, local, and commercial organizations to advance national priorities and serve the public interest.

ORAU operates the Oak Ridge Institute for Science and Education (ORISE), a Department of Energy (DOE) asset that is dedicated to enabling critical scientific, research, and health initiatives of the department and its laboratory system by providing world class expertise in science, technology, engineering, and math (STEM) workforce development, scientific and technical reviews, and the evaluation of radiation exposure and environmental contamination. ORISE administers a broad range of internships, fellowships, and research experiences available primarily to those pursuing STEM disciplines. Programs are offered at DOE national laboratories and other federal agencies with research facilities located across the country as well as some locations outside the United States.

ORAU actively works with its member universities to connect their expertise with government and private sector organizations and to create meaningful partnerships for innovation in scientific research and education. Opportunities provided by ORAU include grants for faculty to travel to establish collaboration with other scientists. Other opportunities

include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, which provide seed money for research by junior faculty at ORAU member institutions and are intended to enrich the research and professional growth of young faculty and result in new funding opportunities. The ORAU-Directed Research and Development (ODRD) program provides a path for funding innovative research-based approaches/solutions that fall within the intersection of ORAU's core capabilities and its member universities research interests.

For more information about ORAU and its programs, visit www.ornl.gov (http://www.ornl.gov) or contact:

Vice President for Research
ORAU Councilor for Texas A&M University
(979) 845-8585

Requirements for Graduate Teaching Assistants

Requirements for Graduate Teaching Assistant (TA) training are in place to improve undergraduate teaching, enhance the classroom experiences of TAs, and respond to the need for systematic preparation and evaluation of Teaching Assistants. For international Teaching Assistants, training requirements will supplement programs already in place to evaluate and promote English language proficiency. New TAs' attendance at the Center for Teaching Excellence (CTE) Teaching Assistant Institute (TAI) is mandatory. Discipline-specific training for new TAs will be provided at the college/department level. The nature of this training, while varying widely across different disciplines, will complement university-level training and will address the unique and specific needs of graduate students serving as TAs within their disciplines.

Visit the Center for Teaching Excellence (CTE) TAI (<http://cte.tamu.edu/Graduate-Student-Support/Teaching-Assistant-Institute>) web page for more information.

Responsible Conduct of Research

Students who will be involved in research involving human subjects (e.g., survey data; human tissue/cell lines, protected health information), animals (e.g., vertebrate animals, animal tissues/cell lines), and/or biosafety/biohazards (e.g., recombinant DNA/transgenic animals, plants; agents infectious to humans, animals or plants) should obtain approval through the appropriate university committee (or be included in existing research approvals) prior to engaging in the research. Engaging in unauthorized research can result in severe penalties for non-compliance. All students are urged to complete responsible conduct of research training early in their programs to support their efforts in conducting research responsibly and ethically.

Additional information, as well as online training, may be obtained from the office of Research Compliance and office of Biosafety at <http://rcb.tamu.edu>.

Student Grievances and Appeals Procedures

Specific procedures at Texas A&M University allow graduate students to pursue a grievance for any of the problems, issues, or concerns listed in the table below. First Professional students can pursue disputes over due process. **BEFORE** initiating a grievance, students are strongly encouraged to seek clarification and advice regarding appropriate procedures. The

campus Graduate Ombuds Officer represents a valuable resource for questions regarding grievances and appeals. The Ombuds Officer advocates for the processes of graduate and professional education and provides equal, open access to all parties: students, faculty, staff, and administrators.

| Type of Grievance/Issue | A&M Student Rule | University Panel Handling Appeals | Appeals Panel Preliminary and Formal Resolution Procedures |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrimination and Discrimination Appeals | 45 (http://student-rules.tamu.edu/rule45) | Discrimination Appeals Panel | 56 (http://student-rules.tamu.edu/rule56) |
| Disability Accommodations in Academic Programs | 46 (http://student-rules.tamu.edu/rule46) | Discrimination Appeals Panel | 56 (http://student-rules.tamu.edu/rule56) |
| Sexual Harassment, Sexual Violence, Dating Violence, Domestic Violence, and/or Stalking | 47 (http://student-rules.tamu.edu/rule47) | University Disciplinary Appeals Panel | 58 (http://student-rules.tamu.edu/rule58) |
| Grade Disputes | 48 (http://student-rules.tamu.edu/rule48) | Graduate Academic Appeals Panel | 59 (http://student-rules.tamu.edu/rule59) |
| Unexcused Absences | 49 (http://student-rules.tamu.edu/rule49) | Graduate Academic Appeals Panel | 59 (http://student-rules.tamu.edu/rule59) |
| Academic Suspension and Blocks | 50 (http://student-rules.tamu.edu/rule50) | Graduate Academic Appeals Panel | 59 (http://student-rules.tamu.edu/rule59) |
| Student Conduct Separation and Appeal | 51 (http://student-rules.tamu.edu/rule51) | University Disciplinary Panel | 58 (http://student-rules.tamu.edu/rule58) |
| Academic Misconduct | 52 (http://student-rules.tamu.edu/rule52) | Aggie Honor System Office | http://aggiehonor.tamu.edu |
| Graduate Student Examination Evaluation Disputes | 53 (http://student-rules.tamu.edu/rule53) | Graduate Academic Appeals Panel | 59 (http://student-rules.tamu.edu/rule59) |
| Financial Assessments by the University | 54 (http://student-rules.tamu.edu/rule54) | Head of Department or Unit Involved | Student Fiscal Appeal Process (https://sbs.tamu.edu/accounts-billing/student-information/appeal-process) |

| | | | |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Parking Citations | 55 (http://student-rules.tamu.edu/rule55) | Student Parking Appeals Board | http://transport.tamu.edu/Parking/appeal.aspx |
| Disputes over Due Process (First Professional Students Only) | 62 (http://student-rules.tamu.edu/rule62) | First Professional Academic Appeals Panel | 62 (http://student-rules.tamu.edu/rule62) |

University Statement for Individuals with Disabilities

Texas A&M University (TAMU) is committed to maintaining an accessible campus community and providing reasonable accommodations to qualified students, faculty, staff and visitors, including making its web sites accessible and usable. TAMU does not discriminate on the basis of an individual's disability and complies with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) as amended.

Students are protected from discrimination regarding access to and participation in TAMU's programs and activities. TAMU provides academic adjustments and auxiliary aides to accommodate needs of students with disabilities, as defined under the law, who are otherwise qualified to meet the institution's academic requirements.

Students with disabilities who would like to request accommodations may contact the following:

- TAMU, Texas A&M University Health Science Center's (TAMHSC) College of Nursing, Irma Lerma Rangel College of Pharmacy College Station, College of Medicine, and School of Public Health should contact Disability Services (979) 845-1637 or disability@tamu.edu.
- TAMHSC College of Dentistry should contact the Office of Academic Affairs (214) 828-8207 to request accommodations.
- TAMU School of Law should contact the Office of Student Affairs at (817) 212-4111 to request accommodations.
- TAMHSC Irma Lerma Rangel College of Pharmacy in Kingsville should contact the Disability Resource Center at TAMU at Kingsville at (361) 593-3024 to request accommodations.
- TAMU at Galveston (TAMUG) should contact Counseling and Career Services at (409) 740-4736 or studentservices@tamug.edu.
- TAMU at Qatar (TAMUQ) should contact the campus psychologist, Dr. Steve Wilson +974-4423-0047 or stephen.wilson@qatar.tamu.edu.

Students with a disability who believe they have experienced discrimination may contact Kevin McGinnis, Chief Risk, Ethics, and Compliance Officer, at the J. K. Williams Building, Suite 302, College Station, TX 77843, civilrights@tamu.edu, or at (979) 458-0308. Students can also contact the TAMU ADA Coordinator at ADA.Coordinator@tamu.edu or (979) 845-8115, or any of the following campus contacts:

- TAMU, TAMU School of Law, and TAMHSC locations should contact the ADA Coordinator at (979) 845-8115 or ADA.Coordinator@tamu.edu.
- TAMUG should contact the ADA Coordinator at (409) 740-4503 or boyerj@tamug.edu.

- TAMUQ should contact Miguel Trevino at +974-4423-0317 or miguel.trevino@qatar.tamu.edu.

For more information about disability accommodations, see TAMU Student Rule [46, Disability Accommodations in Academic Programs](http://student-rules.tamu.edu/rule46) (<http://student-rules.tamu.edu/rule46>) or TAMUG Student Rule [46, Disability Accommodations in Academic Programs](http://www.tamug.edu/studentrules/Academic_Programs) (http://www.tamug.edu/studentrules/Student_Grievance_Procedures/46_Disability_Accommodations.html).

University Statement on Harassment and Discrimination

Texas A&M University is committed to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community. The University provides equal opportunity to all employees, students, applicants for employment or admission, and the public regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or gender identity. Texas A&M University will promptly investigate and resolve all complaints of discrimination, harassment (including sexual harassment), and related retaliation in accordance with applicable federal and state laws.

The University's response to allegations of discrimination, harassment, and related retaliation will be 1) prompt and equitable; 2) intended to prevent the recurrence of any discrimination, harassment or retaliation; and 3) intended to remedy its discriminatory effects, as appropriate. A substantiated allegation of such conduct will result in disciplinary action, up to and including separation from the University. The University's sanctioning guidance for substantiated allegations of discrimination on the basis of sex, including sexual harassment, sexual violence and related retaliation, can be found here: Title IX Cumulative Sanctioning Matrix (<https://urc.tamu.edu/media/1601574/title-ix-sanctioning-matrices-august-2018.pdf>).

Students who have questions or believe they have experienced discrimination, harassment, sexual violence, and/or related retaliation are encouraged to contact Kevin McGinnis, Chief Risk, Ethics, and Compliance Officer, at the J. K. Williams Building, Suite 302, College Station, TX 77843. He may be contacted at civilrights@tamu.edu or at (979) 458-0308.

In addition, any report can be submitted to Jennifer Smith, Title IX Officer, at the Medical Sciences Library, Suite 007, College Station, TX 77843. Her telephone number is: (979) 458- 8167 and email address is civilrights@tamu.edu. Such reports will be immediately forwarded to the Chief Risk, Ethics, and Compliance Officer for investigation and resolution. The Title IX website can be found at <http://urc.tamu.edu/title-ix/>.

To report incidents, request accommodations, or inquire about discrimination based on disability, you may contact Peggy Zapalac, ADA Coordinator, at (979) 845-8115 or ADA.Coordinator@tamu.edu. The office address is 750 Agronomy Road, Suite 2101, College Station, TX 77843 or see the ADA Website at <https://urc.tamu.edu/ada>. Reported incidents will be immediately forwarded to the Chief Risk, Ethics, and Compliance Officer for investigation and resolution.

University Student Rules

Each student enrolled at Texas A&M University is responsible for being fully acquainted with and complying with the Texas A&M University Student Rules. Specific rules, information and procedures may be found

in publications pertaining to each particular service or department. Graduate students are encouraged to reference the website at <http://student-rules.tamu.edu> for current published rules and regulations.

For information concerning federal and state policies, please reference the appendices (p. 1955) in this catalog.

COURSE DESCRIPTIONS

All graduate and professional courses offered in the University are described on each subject page. The unit of credit is the semester hour, which involves one hour of theory or from two to four hours of practice per week for one semester of 15 weeks. Figures following the credit hours indicate the clock hours per week devoted to theory and practice, respectively. Theory includes recitations and lectures; practice includes work done in a clinical setting, laboratory, shop, drawing room, field or other. When courses are cross-listed, credit cannot be received for both courses. Any course may be withdrawn from the session offerings in case the number of registrations is too small to justify offering the course.

ACCT - Accounting

ACCT 603 Energy Accounting

Credits 3. 3 Lecture Hours.

Overview of the oil and gas industry and specialized financial accounting procedures associated with the industry; emphasis on accounting for exploration, development, production, depletion and amortization as well as joint operations, asset impairment and retirement obligation; includes reserve accounting/disclosure related to the above topics.

Prerequisites: ACCT 327 with C or better.

ACCT 607 Seminar in Auditing

Credits 3. 3 Lecture Hours.

Current issues and research in auditing, attestation and financial disclosures. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 407 or equivalent.

ACCT 610 Financial Accounting

Credits 1 to 3. 1 to 3 Lecture Hours.

Develops a conceptual framework for understanding and using corporate financial statements. Oriented towards the user of financial accounting data (rather than the preparer) and emphasizes the reconstruction of economic events from published financial data. May be repeated for up to 3 hours credit. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment is limited to BUAD classification 7 graduate students.

ACCT 611 Management of Taxation

Credits 3. 3 Lecture Hours.

Various income taxes on taxable entities. For business and other majors. Classification 6 students may not enroll in this course.

ACCT 612 Partnership and Real Estate Taxation

Credits 3. 3 Lecture Hours.

Concepts and principles of partnerships and real estate taxation; use of partnerships and real estate for tax planning. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 405.

ACCT 615 Contemporary Tax Topics

Credits 3. 3 Lecture Hours.

Explores business tax topics that provide current/future significant professional tax service opportunities such as specialized applications of business taxation. Intended for graduate students in the Tax Track in the Professional Program in Accounting. May be taken two times for credit.

Prerequisite: ACCT 611.

ACCT 620 Management Accounting and Control

Credits 1 to 3. 1 to 3 Lecture Hours.

Applications of concepts useful to management, in the analysis of accounting data for the purposes of costing and income determination, decision making and control of various organizational activities. May be repeated for up to 3 hours credit. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 610 or equivalent. Enrollment is limited to BUAD classification 7 graduate students.

ACCT 621 Corporate Taxation I

Credits 3. 3 Lecture Hours.

Formation and capital structures, partial liquidations, S corporations, accumulated earnings tax, personal holding companies and other topics. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 405 or equivalent.

ACCT 622 Accounting for Income Taxes

Credits 3. 3 Lecture Hours.

Study of accounting concepts and principles related to reporting of income taxes; including book-tax differences, deferred tax assets and liabilities, valuation allowances, uncertain tax positions, various advanced topics.

Prerequisites: ACCT 328 and ACCT 405, or equivalent; graduate classification.

ACCT 624 Tax technology and Analytics

Credits 3. 3 Lecture Hours.

Streamlining the data collection and management process of the tax function needed to work with people, processes and technologies; includes transformation, direct tax, indirect tax, emerging technologies, global mobility and asset management.

Prerequisites: ACCT 427 and ACCT 405, or equivalent.

ACCT 625 Professional Accounting Seminar

Credit 1. 1 Lecture Hour.

Focuses on increasing understanding of the emerging issues facing professional accountants; provides opportunities to enhance skills necessary to succeed as professional accountants.

Prerequisite: Enrollment in Master of Science in accounting program.

ACCT 628 Business Application Modeling

Credits 3. 3 Lecture Hours.

Focuses on modeling application software commonly used in accounting and business; primary emphasis on Visual Basic for Applications in Microsoft Excel and Access; application exercises will deal with financial problem solving. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 427 or equivalent.

ACCT 629 Controls and Audit Technology

Credits 3. 3 Lecture Hours.

Focuses on internal controls and their importance with regards to financial reporting and arrangement; topics include process walkthrough techniques, documentation, business processes, control frameworks, application controls, change management, operations management and security.

Prerequisite: ACCT 407.

ACCT 640 Accounting Concepts and Procedures I

Credits 3. 3 Lecture Hours.

Accounting concepts and relationships essential to administrative decisions; use of accounting statements and reports as policymaking and policy execution tools. Classification 6 students and non-business graduate students may enroll in this course.

Prerequisite: Graduate classification.

ACCT 644 Control and Audit of Information Systems**Credits 3. 3 Lecture Hours.**

Focuses on the control, audit, and security of information systems; aimed at enhancing the ability of accounting professionals to deal with complex computer-based accounting systems as auditors of these systems; topics include general and application controls, audit software, and e-commerce security.

Prerequisite: ACCT 427; graduate classification.**ACCT 646/IBUS 646 International Accounting****Credits 3. 3 Lecture Hours.**

Introduction and examination of accounting issues unique to multinational enterprises and international business activity. Classification 6 students may not enroll in this course.

Prerequisites: ACCT 328; FINC 341.**Cross Listing:** IBUS 646/ACCT 646.**ACCT 647/FINC 647 Financial Statement Analysis****Credits 3. 3 Lecture Hours.**

Analytical approach to financial statements; application of finance and accounting principles relevant to the analysis of financial statements. Classification 6 students may not enroll in this course.

Prerequisites: FINC 612 or FINC 635; ACCT 610 or ACCT 640.**Cross Listing:** FINC 647/ACCT 647.**ACCT 648 Accounting Information Systems****Credits 3. 3 Lecture Hours.**

Design, implementation, operation, control and audit techniques of accounting information systems. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 427 or equivalent.**ACCT 650 Accounting Ethics****Credits 3. 3 Lecture Hours.**

Integration of ethical reasoning, objectivity, independence and other core values into the development of a professional accountant; critical analysis of the ethical lapses which have occurred in business and the accounting profession; explores ways to integrate ethical behavior into professional life.

Prerequisite: Graduate classification.**ACCT 651 Development of Accounting Thought****Credits 3. 3 Lecture Hours.**

Examination of contemporary financial reporting issues in terms of institutional, ethical, and regulatory environment; framework for exercising judgment when literature provides no direct prescription about correct reporting. Tools used include unstructured cases and open-ended research assignments. Course not open to classification 6 students.

Prerequisite: ACCT 642 or approval of instructor.**ACCT 660 Accounting Information and Financial Markets****Credits 3. 3 Lecture Hours.**

Financial accounting research with emphasis on financial markets; investigates major areas of financial accounting research, related statistical techniques and the progress of research in a historical perspective. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 665 or approval of instructor.**ACCT 665 Research Methodology I****Credits 3. 3 Lecture Hours.**

Nature and evaluation of accounting research; includes preparation and evaluation of original research papers. Classification 6 students may not enroll in this course.

Prerequisite: Doctoral classification.**ACCT 671 Contemporary Accounting Topics****Credits 1 to 3. 1 to 3 Lecture Hours.**

Current issues and research in topical areas: financial data audit and control; international accounting; accounting for natural resources; tax planning, theory and structure of taxation. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.**ACCT 680 Tax Research and Policy****Credits 3. 3 Lecture Hours.**

Methodology and sources of tax research; tax analysis research, policy implications, behavioral aspects and use of quantitative analysis. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 405 or 611.**ACCT 684 Professional Internship****Credits 0 to 3. 0 to 3 Other Hours.**

A directed internship in an organization to provide on-the-job training under the supervision of accounting professionals in organizational settings appropriate to the student's professional objectives. May be taken up to 3 hours for credit. Must be taken on a satisfactory/unsatisfactory basis. Classification 6 students may not enroll in this course.

Prerequisites: Accounting major or approval of committee chair and department head.**ACCT 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisites: Graduate classification and approval of instructor.**ACCT 688 Doctoral Seminar****Credits 3. 3 Other Hours.**

Historical development of the conceptual framework of accounting theory and practices; analysis of current research and controversial issues in the field. For doctoral students only. May be repeated for credit. Classification 6 students may not enroll in this course.

Prerequisite or corequisite: ACCT 665.**ACCT 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of accounting. May be repeated for credit. Classification 6 students may not enroll in this course.

ACCT 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. Classification 6 students may not enroll in this course.

ACCT 705 Accounting for Business Results**Credits 1 to 4. 1 to 4 Lecture Hours.**

Interpretation of annual reports; financial statement creation; assessment of company financial health; identification of factors that impact company earnings quality; valuation model implementation.

Prerequisite: For Master of Science in Business students only.**ACCT 710 Accounting for Managerial Decision Making****Credits 1 to 4. 1 to 4 Lecture Hours.**

Use of accounting information for managerial decision making; cost behavior and control; budgeting; performance measurement; application of accounting data in managing organizational production activities and operation processes.

Prerequisite: For Master of Science in Business students only.

ADDT - Alcohol Drug Dep Trtmnt

ADDT 800 Alcohol and Drug Dependency Treatment

Credits 1.25 to 10. 1.25 to 10 Other Hours.

The ADDT clerkship will expose students to clinical methods for detection, diagnosis, triage, and intervention in a continuum of treatment settings from specialized in-patient care to primary care to community based self-help. It will introduce students to medication strategies for substance abuse treatment while recognizing the primacy of behavioral treatment for most addiction disorders. Students will review current understanding of basic neurobiology common to all addictions along with clinical presentation and specific management of different categories of addictive drugs.

AEGD - Adv Ed Gen Dentistry

AEGD 600 Clinical Dentistry I

Credits 0. 0 Other Hours.

Clinical diagnosis and treatment of advanced comprehensive multidisciplinary cases under faculty guidance and supervision.

AEGD 601 Clinical Dentistry II

Credits 0. 0 Other Hours.

Clinical diagnosis and treatment of advanced comprehensive multidisciplinary cases under faculty guidance and supervision.

AEGD 602 Clinical Dentistry III

Credits 0. 0 Other Hours.

Clinical diagnosis and treatment of advanced comprehensive multidisciplinary cases under faculty guidance and supervision.

AEGD 603 Implant Dentistry

Credit 1.5. 1.5 Lecture Hour.

Diagnosis, management and treatment of both fixed and removable implant patients. Lecture, seminars and patient treatment.

AEGD 604 Practice Management I

Credits 0 to 1.5. 0 to 1.5 Lecture Hours.

5. All areas of practice and business management will be discussed, including office management, personnel management, professional ethics, financial planning, starting a practice, office design and legal responsibilities.

AEGD 605 Practice Management II

Credits 0 to 1.5. 0 to 1.5 Lecture Hours.

5. All areas of practice and business management will be discussed, including office management, personnel management, professional ethics, financial planning, starting a practice, office design and legal responsibilities.

AEGD 606 Advanced Removable Prosthodontics

Credit 1.5. 1.5 Other Hour.

Diagnosis, treatment planning and clinical treatment of complicated cases requiring advanced skills in removable prosthodontics.

AEGD 607 Advanced Fixed Prosthodontics

Credit 1.5. 1.5 Other Hour.

Diagnosis, treatment planning and clinical treatment of complicated cases requiring advanced skills in fixed prosthodontics, including implant restoration.

AEGD 608 Advanced Clinical Periodontics

Credit 1.5. 1.5 Other Hour.

Diagnosis, treatment planning, prognosis and instrumentation skills; basic surgical techniques.

AEGD 609 Advanced Clinical Orthodontics

Credit 1.5. 1.5 Other Hour.

Diagnosis and evaluation of a variety of malocclusions; emphasis on minor tooth movement, interceptive treatment and maintenance of arch integrity.

AEGD 610 Advanced Pediatric Dentistry

Credit 1.5. 1.5 Other Hour.

Diagnosis, treatment planning and clinical treatment of complex pediatric patients; emphasis on medically compromised and behavior management cases.

AEGD 611 Advanced Clinical Endodontics I

Credits 2. 2 Other Hours.

Diagnosis, management and treatment of patients with complex endodontic problems; surgical and nonsurgical treatment and retreatment of complicated cases.

AEGD 612 Advanced Geriatric Dentistry

Credit 1.5. 1.5 Other Hour.

Diagnosis, treatment planning and treatment of geriatric patients with special needs; emphasis on medically, physically and mentally compromised patients.

AEGD 613 Advanced Maxillofacial Surgery

Credits 2. 2 Other Hours.

(0-0-2). Principles of oral surgery techniques and procedures in the outpatient clinic and operating room environments; demonstrations and clinical application.

AEGD 614 Advanced Dentistry for Special Care Patients

Credit 1.5. 1.5 Other Hour.

Clinical application and experience in the care and treatment of special care patients with medical, physical and mental handicaps.

AEGD 615 Treatment Planning Conference I

Credit 1.5. 1.5 Other Hour.

Diagnosis and treatment planning for comprehensive cases involving a multidisciplinary approach; student presentation of complex cases to a graduate faculty forum; defense of treatment plans using documented scientific or clinical evidence.

AEGD 616 Treatment Planning Conference II

Credit 1.5. 1.5 Other Hour.

Diagnosis and treatment planning for comprehensive cases involving a multidisciplinary approach; student presentation of complex cases to a graduate faculty forum; defense of treatment plans using documented scientific or clinical evidence.

AEGD 617 Treatment Planning Conference III

Credit 1.5. 1.5 Other Hour.

Diagnosis and treatment planning for comprehensive cases involving a multidisciplinary approach; student presentation of complex cases to a graduate faculty forum; defense of treatment plans using documented scientific or clinical evidence.

AEGD 618 Current Literature Review I

Credit 1.5. 1.5 Other Hour.

Detailed review of relevant literature on topics selected by the graduate faculty and presentation by graduate students; enhancement of student knowledge in selected subject areas and development of ability to critically evaluate scientific literature.

AECD 619 Current Literature Review II**Credit 1.5. 1.5 Other Hour.**

Detailed review of relevant literature on topics selected by the graduate faculty and presentation by graduate students; enhancement of student knowledge in selected subject areas and development of ability to critically evaluate scientific literature.

AECD 620 Current Literature Review III**Credit 1.5. 1.5 Other Hour.**

Detailed review of relevant literature on topics selected by the graduate faculty and presentation by graduate students; enhancement of student knowledge in selected subject areas and development of ability to critically evaluate scientific literature.

AECD 621 Clinical Pathology I**Credits 1.50 to 2. 1.50 to 2 Other Hours.**

5-2. Presentation and discussion of clinical cases representing various types of oral pathology of both hard and soft tissues; formulation of a logical differential diagnosis and appropriate treatment.

AECD 622 Clinical Pathology II**Credits 1.50 to 2. 1.50 to 2 Other Hours.**

5-2. Presentation and discussion of clinical cases representing various types of oral pathology of both hard and soft tissues; formulation of a logical differential diagnosis and appropriate treatment.

AECD 623 Clinical Pathology III**Credits 1.50 to 2. 1.50 to 2 Other Hours.**

5-2. Presentation and discussion of clinical cases representing various types of oral pathology of both hard and soft tissues; formulation of a logical differential diagnosis and appropriate treatment.

AECD 624 Ethics in Dentistry**Credit 1.5. 1.5 Lecture Hour.**

Ethical approach to practice promotion and professional interactions.

AECD 625 Current Concepts in Operative Dentistry**Credit 1.5. 1.5 Other Hour.**

Recent theories and techniques relating to restorative dental materials; emphasis on indications and contraindications for tooth-colored restorative materials; esthetic dentistry.

AECD 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of advanced education in general dentistry. May be repeated for credit.

Prerequisite: Graduate classification.**AECD 691 Research****Credits 0 to 10. 0 to 10 Other Hours.**

Research for thesis or dissertation.

AERO - Aerospace Engineering

AERO 601 Advanced Aerodynamics**Credits 3. 3 Lecture Hours.**

Theoretical and approximate solutions for steady and unsteady incompressible flows and steady transonic flows; applications to airfoil, wing and whole-vehicle aerodynamics; approximate methods for boundary layers; introduction to aerodynamic design concepts; design of swept wings and delta wings and control surfaces.

Prerequisite: Approval of instructor.**AERO 602 The Theory of Fluid Mechanics****Credits 3. 3 Lecture Hours.**

Entry-level theory of fluid mechanics with emphasis on viscous subsonic flows; governing principles and equations, exact solutions to simple problems of the Navier-Stokes equations, similarity solutions and boundary layer theory; flow stability, transition and turbulence.

Prerequisite: Graduate classification and approval of instructor.**AERO 603/MEMA 602 Continuum Mechanics****Credits 3. 3 Lecture Hours.**

Development of field equations for analysis of continua (solids as well as fluids); conservation laws; kinematics, constitutive behavior of solids and fluids; applications to aerospace engineering problems involving solids and fluids.

Prerequisite: Graduate classification.**Cross Listing:** MEMA 602/AERO 603.**AERO 604 Aerospace Structural Design****Credits 3. 3 Lecture Hours.**

Overall structural integrity of complete aerospace systems; structures subjected to critical loads; design considerations in aerospace structures; use of Abaqus as a finite element analysis tool.

Prerequisites: Graduate classification; AERO 306, or approval of instructor.**AERO 605 Theory of Elasticity****Credits 3. 3 Lecture Hours.**

Analysis of stress and strain in two and three dimensions, equilibrium and compatibility equations, strain energy methods; torsion of noncircular sections; flexure; axially symmetric problems.

Prerequisite: Mechanics of Materials, Advanced Calc Different Equations.**Cross Listing:** MEEN 603 and MEMA 601.**AERO 606 Multifunctional Materials****Credits 3. 3 Lecture Hours.**

In-depth analysis of multifunctional materials and composites, and their novel applications.

Prerequisites: MEMA 602/AERO 603/AERO 603/MEMA 602, MSEN 601.**Cross Listing:** MEMA 606 and MSEN 606.**AERO 608 Nanomechanics****Credits 3. 3 Lecture Hours.**

Application of mechanics concepts to nano-scale behavior of materials. Review of continuum mechanics; Extensions to generalized continua; Nonlocal elasticity; Nano-scale plasticity. Focus on multi-scale modeling: Dislocation Dynamics; Quasi-Continuum method; Molecular dynamics with introductions to quantum mechanics and statistical mechanics.

Prerequisite: AERO 603/MEMA 602.**Cross Listing:** MEMA 608 and MSEN 608.**AERO 609 Sustainability Metrics and Life Cycle Assessment in Engineering****Credits 3. 3 Lecture Hours.**

Concepts of sustainability with associated metrics; application of systems engineering tools to facilitate assessment of viable options on products and processes; assessment of impact on the entire biosphere; product life cycle analysis.

Prerequisite: Graduate classification.

AERO 612/MEMA 612 Wave Propagation in Isotropic and Anisotropic Solids**Credits 3. 3 Lecture Hours.**

Mathematical and experimental methods of studying stress waves with emphasis on anisotropic solids, e.g., fiber-reinforced composite materials; waves in an unbounded medium, in a half-space, in rods; waves in a general anisotropic medium; wave surface, slowness surface, velocity surface, energy velocity and group velocity.

Prerequisites: MEMA 601 or AERO 603/MEMA 602.**Cross Listing:** MEMA 612/AERO 612.**AERO 615 Computational Fluid Dynamics for Aerospace Applications****Credits 3. 3 Lecture Hours.**

Methods for solving internal and external flow problems; viscous and inviscid compressible flow, Euler, Navier-Stokes and Large Eddy Simulation solvers, boundary conditions.

Prerequisite: MATH 601 or approval of instructor.**AERO 616 Damage and Failure in Composite Materials****Credits 3. 3 Lecture Hours.**

Mechanisms and models related to damage and failure in composite materials subjected to mechanical loads.

Prerequisite: Courses in composite materials, elasticity.**Cross Listing:** MEMA 616 and MSEN 636.**AERO 617/MEMA 625 Micromechanics****Credits 3. 3 Lecture Hours.**

Eigenstrains; inclusions, and inhomogeneities; Eshelby's solution for an ellipsoidal inclusion; Eshelby's equivalent inclusion method. Effective elastic properties of composites; composite spheres and cylinders models; bounds on effective moduli; Hashin-Shtrikman bounds; applications to fiber, whisker and particulate reinforced composites; introduction to micromechanics of inelastic composites and solids with damage.

Prerequisites: MEMA 602/AERO 603, or AERO 603/MEMA 602, AERO 605.**Cross Listing:** MEMA 625/AERO 617.**AERO 618/MEMA 626 Mechanics of Active Materials****Credits 3. 3 Lecture Hours.**

Introduction to coupled field theories: constitutive response of materials with thermal and electromagnetic coupling; microstructural changes due to phase transformations; shape memory alloys; piezoelectric and magnetostrictive materials; active polymers and solutions. Micromechanics of active composites.

Prerequisites: MEMA 602/AERO 603.**Cross Listing:** MEMA 626/AERO 618.**AERO 620 Unsteady Aerodynamics****Credits 3. 3 Lecture Hours.**

Theoretical formulation of unsteady airfoil theory and techniques used for determining airloads on oscillating lift surfaces; exact solutions and various approximations presented and evaluated; application to problems of unsteady incompressible, subsonic and transonic flows about airfoils and wings.

Prerequisite: Approval of instructor.**AERO 621 Aeromechanics of Wind Turbines****Credits 3. 3 Lecture Hours.**

Solid and fluid mechanics concepts applied to aerodynamics and aeroelasticity of wind turbine blades; failure analysis and structural design; composites and hybrid materials.

Prerequisite: Graduate Classification.**AERO 622 Spacecraft Dynamics and Control****Credits 3. 3 Lecture Hours.**

Elements of analytical dynamics; modeling different types of spacecraft and control systems, sensors, and actuators; stability; control system design; effects of flexibility; attitude and orbital coupling; environmental effects.

Prerequisites: AERO 422 or ECEN 420.**AERO 623 Optimal Spacecraft Attitude and Orbital Maneuvers****Credits 3. 3 Lecture Hours.**

Application of optimization and optimal control techniques to spacecraft maneuver problems; computation of open loop and feedback controls for linear and nonlinear spacecraft dynamical systems; low-thrust and impulsive control, discretization methods, case studies.

Prerequisite: AERO 423 or equivalent.**AERO 624 Celestial Mechanics****Credits 3. 3 Lecture Hours.**

Analytical and numerical methods for computing spacecraft orbits under the influence of gravitational, aerodynamic, thrust and other forces; Keplerian two-body problem, perturbation methods, orbit determination, navigation and guidance for aerospace vehicles.

Prerequisite: AERO 423 or equivalent.**AERO 625 Modern Control of Aerospace Systems****Credits 3. 3 Lecture Hours.**

Linear and nonlinear controllers for aircraft and spacecraft; state and output feedback of sampled-data control systems; feedback linearization and dynamic inversion; direct sampled-data design using optimal MIMO techniques; sensing considerations, sources and modeling of uncertainties unique to aircraft and spacecraft, robustness analysis.

Prerequisite: AERO 422 or equivalent.**AERO 626 Estimation of Dynamic Systems****Credits 3. 3 Lecture Hours.**

Traditional concepts and recent advances in estimation related to modern dynamic systems found in aerospace disciplines; least squares estimation, state estimation, nonlinear filtering, aircraft position and velocity tracking, attitude determination of spacecraft vehicles, gyro bias estimation and calibration.

Prerequisites: AERO 310 or equivalent; STAT 211 or equivalent.**AERO 627 Principles of Structural Dynamics****Credits 3. 3 Lecture Hours.**

Examination of flexible structures through a review of single degree-of-freedom dynamical systems followed by an in-depth study of continuous and multiple degree-of-freedom systems; emphasis on discrete modeling of structures for vibration analysis and dynamic analysis, with minimal development of methods such as finite elements.

Prerequisite: Graduate classification.**AERO 628 Advanced Spacecraft Dynamics and Control****Credits 3. 3 Lecture Hours.**

Review of fundamental principles; introduction to alternate and advanced methods of dynamics and control for aerospace systems; alternate methods for generating and analyzing equations of motion; techniques for complex multibody systems; variable speed control moment gyros; method of quadratic modes; focus on modeling techniques for aerospace systems.

Prerequisite: AERO 622.

AERO 629 Experimental Aerodynamics**Credits 3. 3 Lecture Hours.**

Review of fundamental principles in aerodynamics; basics of instrumentation, electronics, data-acquisition; experimental techniques in aerodynamics/fluid mechanics; pressure, skin friction, force and velocity measurement techniques in wind and water-tunnel testing; conventional and novel techniques in data-processing and systems modeling; smart systems in experimental aerodynamics.

Prerequisite: AERO 601.

AERO 630 Introduction to Random Dynamical Systems**Credits 3. 3 Lecture Hours.**

Building on basic probability theory, course covers theory and applications of discrete and continuous random processes. Particular attention shall be paid to the response of dynamical systems (discrete, linear and non-linear), to random input processes and their application to Engineering Systems.

Prerequisite: Graduate classification.

AERO 631 Model Predictive Control for Aerospace Systems**Credits 3. 3 Lecture Hours.**

Nonlinear optimal control and optimization, optimal control theory, dynamical systems stability and control, approximation theory, convex optimization; control of engineering systems with state and control constraints with parametric uncertainty; formulate optimal control problems, solve as nonlinear programming problems using available solvers; requires background in control theory.

Prerequisites: Graduate classification and AERO 623 or comparable course.

AERO 632 Design of Advanced Flight Control Systems - Theory and Application**Credits 3. 3 Lecture Hours.**

Modeling, analysis, design and implementation of advanced flight control problems, specifically aerospace engineering applications; includes choice of controlled variables, reduction of controlled variables, design methodology, computational framework, implementation issues, and software environments using various toolboxes.

Prerequisites: Graduate classification and approval of instructor.

AERO 633 Advanced Aerospace Multibody Dynamics**Credits 3. 3 Lecture Hours.**

Techniques for modeling, simulation, and analyzing multibody dynamical systems; includes development of kinematic expressions for articulating bodies, adding and constraining degrees of freedom through mappings; familiarization with industry codes, such as DISCOS; appreciation of learned techniques on various systems, including omni-directional vehicles, Stewart platforms, and gyroscopically-stabilized walking robots.

Prerequisites: AERO 622 or graduate classification and approval of instructor.

AERO 640 Turbulence Processes**Credits 3. 3 Lecture Hours.**

Fundamentals of conservation, Lagrangian, transformation, variance properties; flow features: laminar, transition, turbulence regimes, characteristics, spectrum; statistical (filter/average) description: scales, Reynolds, arbitrary averaging, realizability; elementary turbulence processes: viscous, advective/inertial, role of pressure; elementary process models, viscous RDT, RDT for velocity gradients, equipartition of energy, restricted Euler equations; isotropic, homogeneous turbulence. May be taken 2 times for credit.

AERO 641 High-Speed Combustion for Propulsion**Credits 3. 3 Lecture Hours.**

Study topics in combustion relevant to high-speed subsonic/supersonic air-breathing propulsion; emphasis on the structure of detonations and the operation of combustors under supersonic conditions; structure of shock-waves and the mixing/chemical kinetics that take place in high speeds.

Prerequisite: Graduate classification.

AERO 642 Laser Diagnostics for Combustion and Propulsion**Credits 3. 3 Lecture Hours.**

Laser diagnostics topics as applied to combustion and propulsion: brief exposition of fundamental electromagnetic theory; practice of basic experimental laser techniques used to measure thermochemistry; basic implementation of Raman and Rayleigh scatterings; Laser-Induced Fluorescence (LIF); detection methods, optical systems, noise contributions, and signal enhancement techniques will be discussed.

Prerequisite: Graduate classification.

AERO 643 High-Performance Computational Fluid Dynamics**Credits 3. 3 Lecture Hours.**

Numerical simulations of fluid dynamics problems on massively parallel computers; focus on Direct Numerical Simulations (DNS) where all dynamically relevant scales are resolved; elements of both high-performance computing (HPC) and numerical methods to solve incompressible and compressible flows.

Prerequisite: AERO 615 or approval of instructor.

AERO 645/MSEN 645 Failure Mechanics of Engineering Materials**Credits 3. 3 Lecture Hours.**

Introduction and integration of key experimental, theoretical and computational aspects of failure in engineering materials, including metals, alloys and polymers; brittle fracture, ductile fracture and brittle-to-ductile transitions.

Prerequisites: Graduate classification; MSEN 601.

Cross Listing: MSEN 645/AERO 645.

AERO 649/MEMA 649 Generalized Finite Element Methods**Credits 3. 3 Lecture Hours.**

Systemic introduction to the theory and practice of generalized finite element (FE) methods, including GFEM, the hp-cloud method, particle methods, and various meshless methods with similar character; precise formulation of the methods are presented; known theoretical results for convergence; important issues related to implementation, issues of numerical integration.

Prerequisite: Graduate classification.

Cross Listing: MEMA 649/AERO 649.

AERO 650 Spacecraft Attitude Determination**Credits 3. 3 Lecture Hours.**

Spacecraft attitude determination systems; attitude and error parameterizations, attitude sensors, data processing and calibration; introduction to single- and three- axis attitude determination and to optimal attitude and error estimation: ECI motion and time definitions.

Prerequisite: AERO 423 or equivalent.

AERO 651 Human Spaceflight Operations**Credits 3. 3 Lecture Hours.**

Essential aspects of human spaceflight operations as performed NASA; in-depth understanding of the state-of-the-art in spacecraft operations, including spacecraft systems, ground and launch operations, mission management and on-orbit activities such as science, robotics, spacewalking, and human health maintenance; applications to future space systems.

Prerequisite: Graduate classification.

AERO 655 Helicopter Aerodynamics**Credits 3. 3 Lecture Hours.**

Hovering theory, hovering and vertical flight performance, factors affecting hovering and vertical flight performance, auto-rotation in vertical descent, concepts of blade motion and control, aerodynamics of forward flight, forward flight performance, operational envelope and introduction to conceptual design of helicopters.

Prerequisites: Grade of C or better in AERO 222, AERO 301, and AERO 310; graduate classification.

AERO 660 Nonlinear Flight Dynamics**Credits 3. 3 Lecture Hours.**

Nonlinear equations of motion for coupled aircraft motions; coupled aerodynamic phenomena; application of the direct method of Lyapunov to nonlinear aircraft motions; elastic airplane equations of motion.

Prerequisite: AERO 421 or approval of instructor.

AERO 661 Optical Methods in Aerospace Engineering**Credits 3. 3 Lecture Hours.**

Analysis and design of imaging and interferometric instruments for flight in and above the atmosphere and ground-based observation of orbiting objects; assessment of optical component and system performance.

Prerequisite: Graduate classification.

AERO 670 Turbulence Modeling**Credits 3. 3 Lecture Hours.**

Identification of physical features that render Navier-Stokes equation difficult to compute or model; includes Reynolds-averaged and filtered Navier-Stokes equations for unresolved stresses; development of closure models for pressure-strain correlation, dissipation and turbulent transport Reynolds; algebraic Reynolds stress modeling, Large Eddy Simulations (LES) and hybrid methods; validation and prediction studies.

Prerequisites: AERO 640 and graduate classification or approval of instructor.

AERO 672 Perturbation Methods in Mechanics**Credits 3. 3 Lecture Hours.**

Develop approximate solutions to algebraic, differential, and integral equations; analysis of nonlinear oscillations, nonlinear waves, and boundary-layers; emphasis on combined numerical/perturbations techniques and reducing Partial Differential Equation (PDE) to Ordinary Differential Equation (ODE).

Prerequisites: Graduate classification in aerospace, mechanical or civil engineering.

AERO 673 Boundary Layer Stability and Transition**Credits 3. 3 Lecture Hours.**

Analytical, numerical, and experimental methods for the stability of bounded shear flows; includes techniques for estimating transition to turbulence and the control of transition through laminar flow control.

Prerequisites: Graduate classification and AERO 601, 602, or 603 or approval of instructor.

AERO 674 Hypersonic Flow**Credits 3. 3 Lecture Hours.**

Theoretical formulation of hypersonic flow theory; techniques for hypersonic flowfield analysis; high temperature effects, including both equilibrium and nonequilibrium flows; classical and modern computational methods.

Prerequisite: AERO 303 or equivalent.

AERO 676 Aerothermochemistry**Credits 3. 3 Lecture Hours.**

Fundamentals of kinetic theory, chemical thermodynamics and statistical mechanics; applications to high temperature chemically reacting equilibrium and nonequilibrium aerodynamic flows.

Prerequisite: AERO 303 or equivalent.

AERO 681 Seminar**Credit 1. 1 Lecture Hour.**

Selected research topics presented by the faculty, students and outside speakers.

Prerequisite: Graduate classification.

AERO 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Engineering research and design experience at government or industry facilities away from the Texas A&M campus; design projects supervised by faculty coordinators and personnel at these locations; projects selected to match student's area of specialization.

Prerequisites: Graduate classification and approval of committee chair and department head.

AERO 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Special topics not within scope of thesis research and not covered by other formal courses.

Prerequisite: Graduate classification in aerospace engineering.

AERO 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of aerospace engineering. May be repeated for credit.

Prerequisite: Approval of instructor.

AERO 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Technical research projects approved by department head.

AFST - Africana Studies

AFST 601 Methods of Inquiry Into Africana Studies**Credits 3. 3 Lecture Hours.**

Familiarization with the methodological tradition of African-centered thinking and its relationship to the more popular term Afro-centricity; representation of the thoughts of notable African centered and Afrocentric scholars throughout history as a means to center African descended people throughout history, social analysis and theoretical accounts.

Prerequisite: Graduate classification.

AFST 651/PSYC 651 Cultural Psychology**Credits 3. 3 Lecture Hours.**

Surveys key readings in the field of cultural psychology; discussion and examination of relationship between psychological processes (e.g., motivation, memory, self perception, prejudice) and sociocultural contexts.

Prerequisites: Enrollment in a graduate program or approval of instructor.

Cross Listing: PSYC 651/AFST 651.

AFST 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of problems in the Africana Studies field of research or scholarly activity not pertaining to thesis or dissertation, or selected instruction not covered by other courses.

Prerequisites: Approval of instructor and program director; graduate classification.

AFST 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of Africana Studies.

Prerequisite: Graduate classification.

AGEC - Agricultural Economics

AGEC 601 Commodity Futures and Options Markets**Credits 3. 3 Lecture Hours.**

Price risk management using agricultural commodity futures and options markets, theories of hedging and formulation of optimal hedging strategies, applied hedging strategies evaluated with emphasis on options relative to futures.

Prerequisites: One course in calculus and one course in statistics.**AGEC 603 Land Economics****Credits 3. 3 Lecture Hours.**

Application of economic, financial, legal and related concepts and tools for decision making in land management, real estate development and appraisal of land and attendant resources; public and private property rights and current land and resource management issues emphasized; real estate valuation methods and use of electronic information systems studied.

Prerequisite: AGECE 422 or equivalent.**AGEC 604/PSAA 663 Natural Resource Economics****Credits 3. 3 Lecture Hours.**

Critical evaluation of policies and procedures in natural resource development and use; identification of problems in resource development, the political-economic decision-making processes and analytical tools which can contribute to economic decisions.

Prerequisite: ECON 323.**Cross Listing:** PSAA 663/AGECE 604.**AGEC 605 Rural Real Estate Appraisal and Organization****Credits 3. 3 Lecture Hours.**

Concepts of property rights and their valuation; factors affecting the value of these rights are related to general economic theory to explain real estate market process; specific applications of appraisal techniques in valuing urban and rural real properties.

Prerequisite: AGECE 422.**AGEC 606 Water Resource Economics****Credits 3. 3 Lecture Hours.**

Examination of economic concepts and tools contributing to the solution of water scarcity problems; development of working knowledge of water resource economics; policy options established and explored; analytical tools for performing policy and project assessment introduced and applied.

Prerequisite: MATH 142.**AGEC 607 Research Methodology****Credits 3. 3 Lecture Hours.**

Scientific method in economic research: problem identification and selection, hypothesis testing, assumptions, model selection, data communication; evaluation of research studies and development of thesis prospectus or equivalent.

Prerequisite: MS or PhD graduate classification.**AGEC 608 Economics of Foreign Intervention, Conflict, and Development**
Credits 3. 3 Lecture Hours.

Economic models of conflict and development, socio-political models of conflict; conflict and vulnerable groups; advanced quantitative tools and methods in conflict and development research; interaction between poverty, natural resources and conflict in developing countries; role of multilateral, bilateral and strategic stakeholders in conflict resolution and economic development.

AGEC 610 Economics of Biosecurity**Credits 3. 3 Lecture Hours.**

Economic and policy issues involved with decision making under risk of accidental or deliberate events of agricultural threats involved with animal diseases, food contamination, invasive species, infrastructure disruption, etc.; issues regarding assessments of damages, vulnerability and decision making regarding prevention, detection, response, and recovery.

Prerequisite: Graduate classification.**AGEC 613 International Agricultural Development Policy****Credits 3. 3 Lecture Hours.**

Utilizes real-world examples depicting environments of international development institutions and programs concerning water management, gender, climate change agricultural extension, value chains, agricultural finance and many other issues in developing countries, with emphasis on smallholder agriculture; capstone for the certificate in International Agriculture and Nature Resource Management but available to other majors.

Prerequisites: AGECE 422, AGECE 430, AGECE 452, AGECE 604/PSAA 663, AGECE 606, or other equivalent macroeconomic course.**AGEC 614 Global Food and Agribusiness Policy****Credits 3. 3 Lecture Hours.**

Public policies and programs affecting agriculture and agribusiness; development of policies and programs, identifying relevant issues, reviewing means to attain desired goals, and development of methods to evaluate the consequences of alternative farm policies on U.S. agriculture, agribusiness, trade and resources.

Prerequisites: AGECE 619 or ECON 607 and MATH 142.**AGEC 619 Managerial Economics in Agribusiness****Credits 3. 3 Lecture Hours.**

Practical application of operational and strategic decision-making tools to agribusiness, focusing on important managerial and economic principles and understanding needed to carry out these functions.

Prerequisites: ECON 323, MATH 142 and STAT 303.**AGEC 620 Food Security, Climate and Conflict****Credits 3. 3 Lecture Hours.**

Economic models of food production and consumption in conflict regimes; the micro-economics of violence; the dynamic relationships of climate and agricultural production; potential impacts of climate change on food and socio-political security; food security among insurgent groups; conflict resistant food systems; and the shifting relationships between poor and rich nations in relationship to climate, food and conflict.

Prerequisite: ECON 323 or equivalent, or approval of instructor.**AGEC 621 Econometrics for Agribusiness****Credits 3. 3 Lecture Hours.**

Econometric application and practice; analysis and interpretation of economic data for decision making and microcomputer implementation.

Prerequisites: MATH 142; STAT 303;**corequisite:** ECON 323; ECON 311 or AGECE 430.

AGEC 622 Agribusiness Analysis and Forecasting**Credits 3. 3 Lecture Hours.**

Design, construction, use and evaluation of simulation, forecasting and optimization models to solve applied problems confronting decision makers in agribusiness.

Prerequisite: AGECE 621 or approval of instructor.

AGEC 625 Environment of Agribusiness**Credits 3. 3 Lecture Hours.**

Analysis of the economic, social, political, technological and legal forces that impact the way in which global agribusiness firms compete; emphasis on intensive case study analysis.

Prerequisites: AGECE 619 and AGECE 621.

AGEC 629 Strategic Agribusiness Management**Credits 3. 3 Lecture Hours.**

Practical application of operational and strategic decision-making tools to agribusiness; emphasis on problem recognition and economic analysis related to production, marketing and finance decisions facing agribusiness firms.

Prerequisites: AGECE 619, AGECE 621 and AGECE 625.

AGEC 630 Financial Analysis for Agribusiness Firms**Credits 3. 3 Lecture Hours.**

Application of financial planning and analysis to agribusiness firms; capital budgeting and selection of investments; the role of debt structure and liquidity in firm growth and stability; alternatives for gaining control over financial resources, managing risk and maintaining business efficiency over time.

Prerequisites: ACCT 640 and FINC 635.

AGEC 633 Sustainability in World Development**Credits 3. 3 Lecture Hours.**

Economic development defined; economic structure, economic efficiency, equity, conservation and role of sustainability, characteristics of developing countries; problems facing development planners, policy makers, resource managers; role of local, regional and international institutions, policies, civil society, biodiversity, and climate change; economic foundation of project development, design, financing, and implementation issues.

Prerequisites: ECON 607 or equivalent.

AGEC 634 Rural Financial Markets and Financial Planning**Credits 3. 3 Lecture Hours.**

Organization, structure, conduct, and regulation of lending institutions serving commercial agriculture and rural borrowers; financial statement analysis; cash management; investment planning; loan portfolio analysis; management of the lending function of lenders serving rural businesses.

Prerequisite: Graduate classification.

AGEC 636 Agribusiness Markets and Applied Welfare Analysis**Credits 3. 3 Lecture Hours.**

Theory and practice of consumer and firm behavior in markets; the effects of various policies on markets; welfare measurement applied to problems related to the farm economy; food and resource processing; resource allocations decisions.

Prerequisites: AGECE 635 and 661; ECMT 676; ECON 629 and ECON 630.

AGEC 637 Production Economics and Dynamic Optimization in Agricultural Economics**Credits 3. 3 Lecture Hours.**

Production under certainty and uncertainty with emphasis on agribusiness firm behavior; economic theory and analytical and numerical methods related to dynamic optimization problems.

Prerequisites: AGECE 661; ECMT 675; ECON 629 and ECON 630.

AGEC 638 Managerial Economics for Regulatory Science**Credits 3. 3 Lecture Hours.**

Economic and business frameworks within which the regulations and standards governing the production of food operate; economic theories of the firm and fundamental calculations in finance as the foundation for cost/benefit analyses of existing and proposed regulations; applications to U.S. and global regulations and standards.

AGEC 639/SCSC 635 Comparative Global Standards in Food Systems**Credits 3. 3 Lecture Hours.**

Laws, regulations and standards governing the production, distribution, processing and marketing of food across regions of the world; international standard setting bodies and risk assessment committees; regulatory equivalency and harmonization; product approval procedures; cost/benefits of global standards and trade agreements.

Cross Listing: SCSC 635/AGECE 639.

AGEC 641 Operations Research Methods in Agricultural Economics**Credits 3. 3 Lecture Hours.**

Theory and practice regarding the application of operations research tools to agricultural economics problem areas. Mainly concentrates on optimization approaches.

Prerequisite: AGECE 622.

AGEC 642 Dynamic Optimization in Agricultural and Applied Economics**Credits 3. 3 Lecture Hours.**

Economics of problems of dynamic optimization, focusing on numerical and analytical methods; applications in a wide range of issues related to agricultural and applied economics are considered.

Prerequisites: ECON 629 or approval of instructor.

AGEC 643 Applied Simulation in Agricultural Economics**Credits 3. 3 Lecture Hours.**

Design, construction, validation and use of Monte Carlo simulation models for risk analysis of economic systems; parameter estimation and simulation of multivariate probability distributions in econometric and behavioral models used for business and policy analysis under risk.

Prerequisites: AGECE 622 and AGECE 661 or approval of instructor.

AGEC 645**Credits 3. 3 Lecture Hours.****AGEC 652 International Agribusiness Trade Analysis****Credits 3. 3 Lecture Hours.**

Traditional trade theory encompassing the concepts of comparative advantage, the Heckscher-Olin-Samuelson model, the gain from specialization and trade, partial equilibrium analysis of free trade, violation of the free trade model, welfare effects of trade, trade creation and diversion, introduction to growth and development theories, the relationship between trade and development and related concepts.

Prerequisites: ECON 607 and MATH 142.

AGEC 659 Ecological Economics**Credits 3. 3 Lecture Hours.**

Study of the relationships between ecosystems and economic systems; understanding the effects of human economic endeavors on ecological systems and how the ecological benefits and costs of such activities can be quantified and internalized.

Prerequisite: Graduate classification.

Cross Listing: ESSM 671 and RENR 659.

AGEC 661 Applied Econometric Methods in Agriculture and Resources I
Credits 3. 3 Lecture Hours.

Application of econometric methods in a theoretical framework for the analysis of agricultural markets and farm firm behavior; emphasis on specifying and estimating agricultural production and demand functions and agricultural sector models; selected topics according to student needs.

AGEC 662 Applied Econometric Methods in Agriculture and Resources II
Credits 3. 3 Lecture Hours.

Familiarization with theory and econometric techniques frequently used in applied microeconomic research with emphasis on specification, estimation, interpretation and evaluation of these models.

Prerequisites: ECON 629 and AGECE 661.

AGEC 671 Fundamentals in Agribusiness and Managerial Economics
Credits 3. 3 Lecture Hours.

Economic theory and methods for analyzing operational and strategic problems facing managers of food, fiber and resource businesses; financial, marketing and management topics, including principal-agent, bargaining power, contract theory and business forecasting.

Prerequisites: ECON 629 and ECON 630.

AGEC 672 Fundamentals in Agricultural Markets and Information Economics
Credits 3. 3 Lecture Hours.

Application of information economics theory for analysis of vertical and horizontal relationships between firms along the supply chain.

Prerequisites: AGECE 636 and 661; ECMT 676; ECON 629 and ECON 630.

AGEC 673 Fundamentals in Resource and Environmental Economics
Credits 3. 3 Lecture Hours.

Economic theories and empirical regularities related to the use and management of the environment and natural resources; valuation techniques, externalities, and intertemporal resource management.

Prerequisites: AGECE 635, AGECE 636, AGECE 637; ECON 629 and ECON 630.

AGEC 674 Food and Agricultural Trade and Policy Analysis
Credits 3. 3 Lecture Hours.

Trade policy, farm policy, macroeconomic policy, resource policy and development policy; analysis of policy impacts outside perfect competition and free trade assumptions.

Prerequisites: AGECE 614 and AGECE 652 or approval of instructor.

AGEC 676 Frontiers in Markets and Information Economics
Credits 3. 3 Lecture Hours.

Exploration of advanced topics in the field of markets and information economics. May be taken twice for credit.

Prerequisite: Graduate classification.

AGEC 677 Frontiers in Natural Resource and Environmental Economics
Credits 3. 3 Lecture Hours.

Exploration of advanced topics in the field of natural resource and environmental economics. May be taken twice for credit.

Prerequisite: Graduate classification.

AGEC 681 Seminar

Credit 1. 1 Lecture Hour.

Objectives are to define research problems, develop research problem statements with objectives and hypothesis and specify relevant models to accomplish the objectives and develop the skills in written communication.

AGEC 684 Professional Internship

Credits 1 to 3. 1 to 3 Other Hours.

Pre-professional experience within department guidelines conducted in the area of the student's field of interest.

Prerequisite: Graduate classification.

AGEC 685 Directed Studies

Credits 1 to 4. 1 to 4 Other Hours.

Directed individual study of a selected problem in the field of agricultural economics.

AGEC 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours.

Selected topics in an identified area of agricultural economics. May be repeated for credit.

AGEC 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Thesis or dissertation research.

AGEC 693 Professional Study

Credits 1 to 9. 1 to 9 Other Hours.

Professional paper undertaken as a requirement for the Master of Science Non-Thesis or as an elective for the Master of Agribusiness. May be taken more than once, but not to exceed 3 hours of credit towards a degree.

Prerequisite: Approval of instructor.

AGEC 695 Frontiers in Agribusiness and Managerial Economics

Credits 3. 3 Lecture Hours.

Exploration of advanced topics in the field of agribusiness and managerial economics. May be taken two times for credit.

Prerequisite: Graduate classification.

AGLS - Ag. & Life Sciences

AGLS 600 Agriculture and Life Sciences Graduate Study Aboard

Credits 1 to 18. 1 to 18 Other Hours.

Approved study abroad student participation; reciprocal educational exchange programs. May be taken two times for credit.

Prerequisite: Admission to approved program.

AGLS 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours.

Selected topics in an identified area of agriculture and life science. May be repeated for credit.

Prerequisites: Graduate classification and approval of instructor.

ALEC - Ag Leadership, Ed. & Comm

ALEC 601 Advanced Methods in Agricultural Education

Credits 3. 3 Lecture Hours.

Learning theories; techniques and procedures to enhance the teaching-learning process; methods to evaluate learning.

Prerequisite: Graduate Classification.

ALEC 602 Advanced Instructional Design in Agricultural Science

Credits 3. 3 Lecture Hours.

Designing instruction to meet learning outcomes, motivate students, and evaluate objectives; learning theories and their impact on the teaching and learning process; choosing appropriate teaching methods for specific content; evaluating the teaching-learning process for improvement within the context of secondary agricultural science classrooms.

Prerequisites: Graduate classification.

ALEC 603 Experiential Learning**Credits 3. 3 Lecture Hours.**

Theory and practice in facilitating learning from experiences in formal, informal, and non-formal settings; experiential learning in classroom/laboratory settings, guided inquiry, internships/externships, service learning, project-based learning, and outdoor/adventure learning.

Prerequisite: Graduate classification.**ALEC 604 Writing for Professional Publication****Credits 3. 3 Lecture Hours.**

Provides students in Agricultural and Extension Education with the skills necessary to compose research manuscripts, conference papers, and journal articles.

Prerequisites: Graduate classification.**ALEC 605 Facilitating Complete Secondary Agricultural Science Programs****Credits 3. 3 Lecture Hours.**

Theory and practice in facilitating secondary agricultural science programs that include classroom instruction, supervised experience, and youth leadership development. Designed for students preparing to teach agricultural science in Texas public schools.

Prerequisite: Graduate classification.**ALEC 606 Foundations of Leadership Theory****Credits 3. 3 Lecture Hours.**

Theory and Practice of leadership theory foundational to leadership education. Focus on analysis of leadership theories and models; synthesis of leadership theory as a philosophy; and application of leadership theories in various professional settings.

Prerequisite: Graduate classification.**ALEC 607 Youth Leadership Programs****Credits 3. 3 Lecture Hours.**

Methods and procedures of organizing and conducting youth leadership programs in school and non-school settings.

Prerequisite: Graduate classification.**ALEC 608 Leadership of Volunteers****Credits 3. 3 Lecture Hours.**

Models of volunteerism; reasons for volunteers; assessment and evaluation techniques; task descriptions; organizational relationships.

Prerequisite: Graduate classification.**ALEC 609 Learning Organizations****Credits 3. 3 Lecture Hours.**

Theory of instruction to support education in social systems language and archetypes; systems thinking theory including mental models; mastery, team learning, concept models of human organizations.

Prerequisites: Graduate classification.**ALEC 610 Principles of Adult Education****Credits 3. 3 Lecture Hours.**

Identification of basic principles motivating adults to learn. Procedures to implement these principles in bringing about changes in adult behavior.

Prerequisite: Graduate classification.**ALEC 611 Advanced Methods in Distance Education****Credits 3. 3 Lecture Hours.**

Course design theory for synchronous and asynchronous instructional methodology; teaching and training models for distance education.

Prerequisite: Graduate classification.**ALEC 612 Advanced Instructional Design for Online Learning****Credits 3. 3 Lecture Hours.**

Emphasis on applying learning and teaching theory as the foundation for developing engaging online instruction; designed to pull together theory, concepts, and strategies for a broad understanding of the fundamentals of online learning from the conceptual stage to the development and delivery stages.

Prerequisites: Graduate classification.**ALEC 613 Techniques in eLearning Development and Delivery****Credits 3. 3 Lecture Hours.**

Provides the knowledge and skills necessary to develop and deliver effective online courses, training programs, and learning units; specific topics include: management of eLearning projects, needs assessment and audience analysis, creation and editing of documents, images, audio, and video.

Prerequisites: Graduate classification.**ALEC 615 Philosophy of Agricultural Education****Credits 3. 3 Lecture Hours.**

Historical and philosophical developments in education that brought about education in agriculture; ideas of individuals that culminated in agricultural education institutions and organizations.

Prerequisite: Graduate Classification.**ALEC 616 Facilitation of Leadership Programs****Credits 3. 3 Lecture Hours.**

Investigate models to design leadership education programs; incorporate strategies to enhance the leadership education process; critically analyze leadership education research and group leadership education processes.

Prerequisite: Graduate classification.**ALEC 617 Leadership in Organizational Culture and Ethics****Credits 3. 3 Lecture Hours.**

Integration of organizational culture and ethical theories; implications and role of leaders in organizational culture and ethical situations; critical analysis of organizational culture and ethics in agricultural organizations.

Prerequisite: Graduate classification.**ALEC 620 Instrumentation and Survey Research Methods****Credits 3. 3 Lecture Hours.**

Principles, theories, techniques, and applications for developing survey questionnaires and conducting survey research in agriculture; developing questions; constructing instruments; implementing surveys; and reducing coverage and sampling errors.

Prerequisite: Graduate classification.**ALEC 622 Data Collection, Analysis, and Interpretation in Research in ALEC****Credits 3. 3 Lecture Hours.**

Data Collection, Analysis, and Interpretation in Research in Agricultural Leadership, Education, and Communications. Principles and techniques of data collection, analysis, and interpretation in agricultural leadership, education, and communications; interpretation and implications of finds/ results in relation to current research; data analysis performed using statistical package software; collection, analysis, and interpretation to conform to published research in agricultural leadership, education, and communications.

Prerequisite: Research methods and basic statistics courses; graduate classification.

ALEC 623 Survey of Evaluation Strategies for Agriculture**Credits 3. 3 Lecture Hours.**

Designed to pull together theory, concepts, and strategies to give a broad understanding of the fundamentals of evaluation and to provide the knowledge and skills necessary to design and administer appropriate and effective evaluations.

Prerequisite: Graduate classification.**ALEC 624 Developing Funded Research Projects****Credits 3. 3 Lecture Hours.**

Students team with faculty mentor to develop a proposal for external funding from a federal agency; principles discussed to produce competitive proposals; proposal steps adapted to fit interests of the students and faculty.

Prerequisite: Graduate classification.**ALEC 625 Program Evaluation and Organizational Accountability****Credits 3. 3 Lecture Hours.**

Examines the philosophy, methods, and issues of accountability and evaluation necessary to meet expectations of institutional mandates. Special emphasis on analytical tools and performance measures.

Prerequisite: Graduate classification.**ALEC 630 Guidance and Counseling for Rural Youth****Credits 3. 3 Lecture Hours.**

Problems of youth with special attention given to rural youth; theories of vocational development reviewed and techniques and procedures developed to help youth make career choices.

Prerequisite: Graduate classification.**ALEC 631 Development and Planning of Community Education Programs****Credits 3. 3 Lecture Hours.**

Focuses on the principles, theories, techniques, and applications for developing and planning educational program in a community setting; program development strategies, focusing educational programming in relation to issues identified citizens will be developed and enhanced in this course.

Prerequisite: Graduate classification.**ALEC 640 Methods of Technological Change****Credits 3. 3 Lecture Hours.**

Dynamics of cultural change as theoretical framework for planned technological change; methods of planning and implementing change, its effects and how it can be predicted.

Prerequisite: Graduate classification.**ALEC 644 The Agricultural Advisor in Developing Nations****Credits 3. 3 Lecture Hours.**

Trends, conditions, critical incidents, techniques, roles and preparation affecting the success of persons desiring to provide technical assistance in projects of agricultural development by serving as agricultural advisors in developing nations, especially in cross-cultural settings.

Prerequisite: Graduate classification.**ALEC 645 Initiating, Managing and Monitoring Projects of International Agricultural Development****Credits 3. 3 Lecture Hours.**

Origin of projects in agricultural development involving host governments; procedures in developing contracts with sponsors; duties and responsibilities of contract administrators, project leaders and the home institution; reporting systems, project reviews and evaluation procedures; procedures effective in managing projects.

Prerequisite: Graduate classification.**ALEC 646 Institutions Serving Agriculture in Developing Nations****Credits 3. 3 Lecture Hours.**

Comparisons among programs and functions, strengths and weaknesses, organization, and relationships of institutions and agencies in public sectors serving agriculture in developing nations; includes those responsible for agricultural extension, agricultural research, agrarian reform, price stabilization, agricultural credit and agricultural cooperatives.

Prerequisite: Graduate classification.**ALEC 652 Images of Agriculture: Visual Communication Research****Credits 3. 3 Lecture Hours.**

Explore visual communication from theoretical, physiological, and interpretive perspectives as it applies to media images used to depict agriculture and agricultural issues; current research in visual communication and its application to agriculture; use of visual images in agricultural communication research.

Prerequisite: ALEC 695 or introductory research methods.**ALEC 681 Seminar****Credit 1. 1 Lecture Hour.**

Group study and discussion of current developments in agricultural education; research and legislation as they affect programs in teacher education, agricultural science and related areas of education.

Prerequisite: Graduate classification.**ALEC 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

On-the-job supervised experience program conducted in the area of the student's specialization.

Prerequisites: Graduate classification.**ALEC 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Studies related to classroom, laboratory, supervised activities in agriculture, work experience, extension education and adult educational activities in agricultural programs.

Prerequisite: Graduate classification.**ALEC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of agricultural education. May be repeated for credit.

Prerequisite: Graduate classification.**ALEC 690 Theory of Agricultural Education Research****Credits 3. 3 Lecture Hours.**

Theory and design of research problems in agricultural education; communication of research proposal and results of research; evaluation of current research of faculty and students; review of current research literature. May be taken three times for credit.

Prerequisite: Graduate classification.**ALEC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Initiation and completion of research for advanced degree.

Prerequisite: Graduate classification.**ALEC 692 Professional Study****Credits 1 to 23. 1 to 23 Other Hours.**

Approved professional study of project undertaken as the terminal requirement for degree of Doctor of Education; preparation of a record of study summarizing the rationale, procedure and results of the completed project.

Prerequisite: Graduate classification.

ALEC 693 Professional Study in Agricultural Leadership Education and Communications**Credits 1 to 3. 1 to 3 Other Hours.**

Approved professional paper undertaken as the requirement for the Master of Agriculture. May be taken more than once, but not to exceed 3 hours of credit toward a degree.

Prerequisite: Graduate classification.**ALEC 695 Frontiers in Research****Credits 3. 3 Lecture Hours.**

Basic concepts of quantitative and qualitative research; understanding the social science research process; using appropriate methods to address research problems; enabling students to effectively evaluate, consume, and communicate research findings.

Prerequisite: Graduate classification.**ALEC 696 Qualitative Research Methods****Credits 3. 3 Lecture Hours.**

Overview of qualitative research in agricultural education including conducting a literature review, writing a working hypothesis, keeping methodological and reflexive journals, developing data gathering tools, performing data analysis, ensuring trustworthiness measures, and writing a research manuscript.

Prerequisites: ALEC 690 or ALEC 695 and graduate classification.

ANES - Clinical Anesthesiology

ANES 801 Clinical Anesthesiology**Credits 1.25 to 10.**

This 2- or 4-week elective will introduce the student to the practice of anesthesiology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 802 Clinical Anesthesiology****Credits 1.25 to 10.**

This 2- or 4-week elective will: 1) Provide an introductory experience in the practice of anesthesiology. All work will be under the supervision of a senior staff anesthesiologist or a resident. 2) Familiarize the student with the pharmacology and practical utilization of common general and local anesthetic agents. 3) Introduce the student to the preoperative evaluation, anesthetic management and post-op care of patients. 4) Teach the practical essentials of airway management including endotracheal intubation. 5) Teach the practical essentials of fluid and transfusion therapy. 6) Present the management concepts of patients requiring postoperative mechanical ventilation and specialized respiratory care. 7) Provide experience in arterial blood gas sampling, analysis, and interpretation.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 803 Clinical Anesthesiology****Credits 1.25 to 10.**

This 4-week elective provides an introductory experience in the practice of anesthesiology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 804 Clinical Anesthesiology****Credits 1.25 to 10.**

This 4-week elective is designed for the students receive an introductory experience in the practice of anesthesiology under the supervision of faculty. Students will become familiarize with the pharmacology and practice utilization of common general and local anesthetic agents, as well as, be introduced to the preoperative evaluation, anesthetic management and post-op care of patients.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 805 Obstetric Anesthesiology****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective will provide the student with increasing responsibility for assessing and anesthetic planning for parturients admitted to labor and delivery. Students will become familiar with anesthetic agents used in obstetrics, managing anesthetic complications in obstetrics. This elective will also allow student to perform endotracheal intubations in the main operating room and start intravenous lines in Day Surgery

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 806 Clinical Anesthesiology****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 4-week elective will provide the student with an introduction to the scope and practice of Anesthesiology with emphasis on the multiple and varied roles performed by anesthesiologists in modern healthcare. Students will become familiar with study of Anesthesiology so as to enable a practical understanding of the principles of modern anesthesia care as they relate to a variety of clinical situations.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 807 Pain Clinic****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 4-week elective is designed to teach a broad spectrum of chronic pain conditions including, but not limited to, common causes of low back pain, thoracic pain, cervical pain, hip pain, shoulder pain, and neuropathic pain. It will increase the student's familiarity and knowledge with the use of indications for common interventional management options for the above conditions.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**ANES 808 Anesthesiology****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective will provide the student with an introductory experience in the practice of anesthesiology under the supervision of faculty. Student will become familiar with the pharmacology and practice utilization of common general and local anesthetic agents as well as be introduced to the preoperative evaluation, anesthetic management and post-op care of patients.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

ANES 809 Anesthesiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective will provide the student with an introductory experience in the practice of anesthesiology under the supervision of faculty. Students will become familiar with the pharmacology and practice utilization of common general and local anesthetic agents, used in the practice of anesthesiology. This elective will also allow students to demonstrate basic airway management techniques, including airway evaluation, mask ventilation and direct laryngoscopy.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

ANES 985 Off Campus Student Initiated Elective**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

ANES 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Anesthesiology in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

ANSC - Animal Science

ANSC 601/NFSC 601 General Animal Nutrition**Credits 3. 3 Lecture Hours.**

Comparative nutrition of animal species contrasting digestive, metabolic and physiological functions involved in processing and using nutrients.

Prerequisite: ANSC 303/NFSC 303 or ANSC 318 or equivalent.

Cross Listing: NFSC 601/ANSC 601.

ANSC 602/NFSC 602 Energetics of Metabolism and Growth**Credits 3. 3 Lecture Hours.**

Current fundamental concepts in protein and energy metabolism relating to nutrients required for maintenance, growth and development of animals.

Prerequisite: BICH 410 or approval of instructor.

Cross Listing: NFSC 602/ANSC 602.

ANSC 604 Ruminant Nutrition**Credits 3. 3 Lecture Hours.**

Current concepts in anatomy, physiology of digestion and metabolism in ruminant nutrition and their relationships to nutrition practice and research with emphasis on ruminants.

Prerequisites: ANSC 601/NFSC 601 or ANSC 602/NFSC 602; BICH 411 or BICH 603 and/or approval of department head.

ANSC 605 Advancements in Beef Cattle Production**Credits 3. 3 Lecture Hours.**

Current knowledge and concepts in production of lean beef; review of research in beef cattle production, breeding, nutrition, reproduction and economics.

Prerequisites: ANSC 305, ANSC 318 and ANSC 406 or approval of department head.

ANSC 607/NFSC 607 Physiology and Biochemistry of Muscle as a Food**Credits 3. 3 Lecture Hours.**

Biochemical, histological, anatomical and physical characteristics of muscle cells and factors associated with transformation of muscle cells into meat.

Prerequisite: BICH 410 or approval of department head.

Cross Listing: NFSC 607/ANSC 607.

ANSC 608 Beef Cattle Management**Credits 3. 3 Lecture Hours.**

Current knowledge of beef cattle ranch and feedlot production systems; nutrition, management, breeding, body composition, economics, health, pollution and sanitation control.

Prerequisite: ANSC 406 or ANSC 408.

ANSC 609 Physiology of Growth and Stress in Livestock**Credits 3. 3 Lecture Hours.**

Basic biochemical, physiological and endocrine mechanisms involved in processes regulating metabolism, growth and stress in livestock; current research and management principles/concepts useful to study growth and stress physiology; anabolic agents, anti-stress agents, immunoneutralization; transgenic livestock.

Prerequisites: BICH 410 and BICH 411 or approval of instructor.

ANSC 610 Applied Animal Ethology**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Review and evaluation of ethological research and principles as they relate to the management of animals; research principles and techniques used in studying animal behavior; psychological and physiological aspects of stress; topics of interest to students; visits to laboratories of researchers studying aspects of animal behavior/ethology.

ANSC 611 Equine Nutrition**Credits 3. 3 Lecture Hours.**

Review and evaluation of current research in equine nutrition; principles of digestive physiology and nutrition unique to equine species; comparative digestion; integration of scientific principles into feeding management systems to enhance productivity, health and longevity of the equine.

Prerequisite: ANSC 601/NFSC 601 or approval of department head.

ANSC 612 Equine Reproduction**Credits 3. 3 Lecture Hours.**

Review of current research relating to equine reproductive physiology and endocrinology; concepts from current research in equine reproduction to develop integrated reproductive management systems for horses.

Prerequisites: ANSC 433; graduate classification.

ANSC 613/NFSC 613 Protein Metabolism**Credits 3. 3 Lecture Hours.**

Basic concepts and recent advances in protein metabolism in animals with emphasis on physiological and nutritional significances; discussion of protein digestion; absorption of peptides; absorption, synthesis and degradation of amino acids; hormonal and nutritional regulation of protein turnover; determination of protein quality and requirements.

Prerequisite: BICH 411 or BICH 601 or equivalent or approval of instructor.

Cross Listing: NFSC 613/ANSC 613.

ANSC 614/GENE 614 Maximum Likelihood Estimation of Genetics
Credits 3. 3 Lecture Hours.

Theoretical and analytical approaches to the application of maximum likelihood for the estimation of parameters under linear and nonlinear models; single and polygene genetic models including Hardy-Weinberg equilibrium, linkage analysis and quantitative trait loci detection.

Prerequisites: GENE 603; STAT 651 and STAT 652 or STAT 601.

Cross Listing: GENE 614/ANSC 614.

ANSC 615 Brazil: Comparative Ruminant Animal Nutrition
Credits 3. 3 Lecture Hours.

Contrast two scenarios of ruminant production in Brazil; the effects of globalization on the two different production systems.

Prerequisites: ANSC 603 or ANSC 604, or approval of instructor.

ANSC 616 Equine Exercise Science
Credits 3. 3 Lecture Hours.

Review and evaluation of current research in equine exercise science; physical, physiologic and metabolic adaptation to physical training in the horse; bioenergetics; nutritional requirements; problems in the hard-working horse; management and training approaches to delay fatigue in race/performance horses.

Prerequisites: ANSC 420; BICH 411; graduate classification.

ANSC 617/NFSC 617 Experimental Techniques in Meat Science
Credits 3. 1 Lecture Hour. 6 Lab Hours.

Methods used in separating and identifying muscle proteins and fats; techniques for determining postmortem changes of muscle tissue as a result of antemortem treatments.

Prerequisites: ANSC 607/NFSC 607; BICH 411.

Cross Listing: NFSC 617/ANSC 617.

ANSC 618/NFSC 618 Lipids and Lipid Metabolism
Credits 3. 3 Lecture Hours.

Chemical nature of various classes of lipids and lipid-derived hormones; absorption and metabolism of fatty-acids and lipids; regulation of lipid biosynthesis and obesity; relationship between lipid metabolism and cholesterol homeostasis; lipids as hormones.

Prerequisite: BICH 410 or approval of instructor.

Cross Listing: NFSC 618/ANSC 618.

ANSC 619 Physiological Chemistry of Livestock Species
Credits 3. 3 Lecture Hours.

Integration of biochemical concepts with physiological chemistry and intermediary metabolism of livestock species; unique aspects of absorption and cellular metabolism of carbohydrates, lipids and proteins in livestock species; regulation of cellular nutrient metabolism in livestock species.

Prerequisite: BICH 410 or approval of instructor.

ANSC 621 Issues in the Equine Industry
Credits 3. 3 Lecture Hours.

Integration of cumulative knowledge acquired in the equine science curriculum to demonstrate critical thinking and communication skills to address critical issues in the equine industry.

Prerequisite: Approval of instructor or enrollment in master of equine industry management program.

ANSC 622 Research Methods in Animal Science
Credits 2. 2 Lecture Hours.

Development of the conceptual framework of research; study of software programs for data recording, management, and analysis; evaluation of specific experimental designs historically used in animal experiments; discussion of interpretations found in peer-reviewed research publications; data presentation for scientific meetings and publication; the peer review process and publication in technical journals.

Prerequisite: STAT 651; or STAT 652.

ANSC 623/POSC 625 Precision Diet Formula
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Theoretical and applied principles associated with precision feeding and diet formulation to optimize nutrient requirements; optimization using least-cost formulation, ingredient inventory, farm and feed mill management, and nutrient management of non-ruminants (poultry, swine, horse, and fish) and ruminant animals (beef and dairy).

Prerequisite: POSC 411 or ANSC 318.

Cross Listing: POSC 625/ANSC 623.

ANSC 624 Mammalian Developmental Genetics
Credits 3. 3 Lecture Hours.

Genetic control of developmental pathways responsible for pattern formation and morphogenesis in mammals; genetic networks and genome organization; significance of genetic regulatory networks as a source of evolutionary diversity.

Prerequisites: GENE 301 or GENE 320/BIMS 320; BICH 410/411 or equivalent.

ANSC 626/GENE 626 Analyses of Gene Expression
Credits 2. 1 Lecture Hour. 3 Lab Hours.

Proficiency in handling DNA and RNA gained during exercises used routinely in analyses of gene expression; RNA preparation and analysis on Northern blots; in vitro transcription and polyacrylamide gel analysis of nucleic acids; sub-cloning and mRNA quantitation using polymerase chain reaction.

Prerequisites: GENE 450 or approval of instructor; radiation safety training.

Cross Listing: GENE 626/ANSC 626.

ANSC 627 Carcass Composition and Quality
Credits 3. 3 Lecture Hours.

Survey of scientific literature regarding carcass composition; quality and palatability of meat animals; factors that affect differences among animals of the same specie; impact on value and usefulness.

Prerequisite: Graduate classification.

ANSC 628 Animal Breeding
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Concepts from Mendelian, population and quantitative genetics; heritability, selection response, selection criteria, selection index, genetic relationship, inbreeding, mating systems, hybrid vigor and genetic-environmental interaction applied to livestock breeding and to production systems; interactions between genetics and nutrition, reproduction, production and management for both established concepts and recent trends emphasized according to special interests of students.

Prerequisite: ANSC 305 or POSC 414.

ANSC 629 Applied Animal Genomics**Credits 3. 3 Lecture Hours.**

Theory and application of genomics by livestock industries; consideration of genetic markers, gene mapping methods, genome analysis and emerging technologies such as microarrays, transgenesis, cloning and marker assisted selection; exposure to bioinformatic tools for genomics.

Prerequisite: GENE 603.**Cross Listing:** GENE 629 and POSC 630.**ANSC 630 Reproductive Biology I****Credits 4. 4 Lecture Hours.**

Embryological, physiological, hormonal, cellular and molecular mechanisms involving the endocrine and reproductive systems of mammals; emphasis on domestic livestock, rodents and humans; current theories evaluated and discussed using information from recent scientific publications.

Prerequisites: ANSC 433; BICH 411 or equivalent.**ANSC 631 Reproductive Biology II****Credits 4. 4 Lecture Hours.**

Embryological, physiological, hormonal, cellular and molecular mechanisms involving the endocrine and reproductive systems of mammals; emphasis on domestic livestock, rodents and humans; current theories evaluated and discussed using information from recent scientific publications.

Prerequisite: ANSC 630 or approval of instructor.**ANSC 633 Concepts in Reproduction****Credits 3. 3 Lecture Hours.**

Concepts from current research in physiology of reproduction evaluated and applied for enhancement of livestock production efficiency; ovulation control, embryo transfer, multiple births and control of parturition.

Prerequisite: ANSC 433 or equivalent or approval of department head.**ANSC 636 Texas Panhandle Beef Production Tour****Credits 2. 2 Lecture Hours.**

Covers all facets of beef production from cow/calf operation to retail product; experiential knowledge of technologies and practices to enhance efficiency; enlightens the array of career opportunities in the beef production industry.

Prerequisite: Approval of instructor.**ANSC 637 Food Safety: Policy, Regulations and Issues****Credits 3. 2 Lecture Hours. 1 Lab Hour.**

Designed to explore the complexities of the regulations governing the production of foods of animal origin in the United States; requirements for countries importing products into the United States; federal, state and local requirement will be addressed.

Prerequisites: ANSC/FSTC 457/657 or approval of instructor.**ANSC 638/GENE 638 Prediction of Genetic Merit****Credits 3. 3 Lecture Hours.**

Mixed linear models and best linear unbiased prediction for genetic evaluation.

Prerequisite: GENE 613.**Cross Listing:** GENE 638/ANSC 638.**ANSC 639/GENE 639 Bacterial Genomics****Credits 3. 3 Lecture Hours.**

Analysis of bacteria on the whole genome level including effects on microbiology, ecology, epidemiology, diagnostics and bacterial pathogenesis; exploration of the variability of bacterial genomes within and across bacterial species; discovery of how these variations affect bacterial cell function, virulence and epidemiology.

Prerequisites: Graduate classification or approval of instructor.**Cross Listing:** GENE 639/ANSC 639.**ANSC 647/NFSC 647 Technology of Meat Processing and Distribution****Credits 3. 3 Lecture Hours.**

Quantitative and qualitative characteristics of meat and meat products as related to food technology processing operations; manufacturing, preservation, packaging and merchandising.

Cross Listing: NFSC 647/ANSC 647.**ANSC 651 Current Issues in Animal Agriculture****Credits 3. 3 Lecture Hours.**

Projecting a professional image and utilizing communication skills to describe animal agriculture; strengths and weaknesses of animal agriculture.

Prerequisite: Graduate classification.**ANSC 657/NFSC 657 Hazard Analysis and Critical Control Point System****Credits 3. 3 Lecture Hours.**

Examination of the Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices (GMP) and standard operating procedures (SOP) development; team-building and implementation into industry operations. This class is designed for the production of food and fulfills the training requirements of USDA's HACCP regulation for meat and poultry (9 CFR Part 417), and FDA's HACCP regulations for fish and fishery products (21 CFR Part 123 and 1240) and for juice (21 CFR Part 120).

Cross Listing: NFSC 657/ANSC 657.**ANSC 667/NFSC 667 Industrial Processed Meat Operations****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Application of scientific principles and business practices to manufactured meat products; interrelationships among marketing, manufacturing, product development, regulatory compliance and quality assurance in commercial processed meat operations.

Prerequisite: Approval of instructor.**Cross Listing:** NFSC 667/ANSC 667.**ANSC 670/NFSC 670 Quality Assurance for the Food Industry****Credits 3. 3 Lecture Hours.**

Principles of food system process control; statistical process control (SPC); tools required to assure uniform communication and understanding of quality assurance systems.

Prerequisite: Graduate classification.**Cross Listing:** NFSC 670/ANSC 670.**ANSC 680 Applied Concepts of Meat Animal Myology****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Introduction to fundamental concepts of meat animal myology as they pertain to industrial meat science; standard formats for scientific nomenclature in the context of meat science and industry related terminology; fabricated cuts used to illustrate myology concepts.

Prerequisite: Graduate classification.**ANSC 681 Seminar****Credit 1. 1 Lecture Hour.**

Important current developments in field of animal science; review of current literature and presentation of papers on selected animal science topics.

Prerequisite: Graduate classification in animal science.

ANSC 684 Professional Internship**Credits 1 to 16. 1 to 16 Other Hours.**

Experience in the application of formal training to a commercial operation under supervision of the operations manager and a designated faculty member. The student will investigate a matter of mutual interest to the enterprise manager and to Texas A&M University; will collect, analyze and interpret the data and report the results in a professional paper approved by his or her graduate committee.

ANSC 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Advanced studies in animal science problems and procedures. Problems assigned according to experience, interest and needs of individual student.

Prerequisite: Approval of department head.**ANSC 687/NFSC 687 Sensory Evaluation of Foods****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Application of sensory science principles and practices to food systems including an understanding of discriminative, descriptive and consumer sensory techniques.

Prerequisite: CHEM 222 or CHEM 228.**Cross Listing:** NFSC 687/ANSC 687.**ANSC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Special topics in an identified area of animal science. May be repeated for credit.

Prerequisite: Approval of department head.**ANSC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Investigations leading to student's thesis or dissertation in fields of animal production, meats, wool and mohair, nutrition, inheritance of farm animals and physiology of reproduction.

ANSC 697/NFSC 697 Applied Microbiology for Foods of Animal Origin: Processing, Sanitation and Sanitary Design**Credits 3. 3 Lecture Hours.**

Application of basic food microbiology knowledge and principles to food production processes and products; sources of microbiological contamination and their impact on food safety and spoilage; application of sanitary design and validation; testing and auditing to monitor and trouble-shoot the process.

Prerequisites: DASC 326 or NFSC 326/ANSC 326, or NFSC 606/DASC 606, or equivalent.**Cross Listing:** NFSC 697/ANSC 697.

ANTH - Anthropology

ANTH 601 Biological Anthropology**Credits 3. 3 Lecture Hours.**

Survey of the field of biological anthropology covering the principles of evolution, human evolution, human adaptation, human variation, primate diversity and evolution, osteology and bioarchaeology.

ANTH 602 Archaeological Methods and Theory**Credits 3. 3 Lecture Hours.**

Development of archaeology as a discipline; methods and theories used in archaeology for reconstructing cultural history and cultural process.

ANTH 603 Seafaring Life and Maritime Communities**Credits 3. 3 Lecture Hours.**

Employs primary and scholarly sources to examine the social organization, work routines, living conditions, and material culture of mariners between 1450 and 1950; broader trends in maritime communities and global seafaring are also investigated.

Prerequisite: Approval of instructor.**ANTH 604 Cultural Method and Theory****Credits 3. 3 Lecture Hours.**

Survey of the theoretical concepts used in anthropology and how to construct models used in cultural and social anthropology.

ANTH 605 Conservation of Archaeological Resources I**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Fundamentals and applications of artifact conservation techniques in archaeology.

Prerequisite: Knowledge of basic chemistry and physics recommended.**ANTH 606 Conservation of Archaeological Resources II****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Comprehensive study of techniques used in the identification and conservation of metal and wooden artifacts.

Prerequisite: ANTH 605.**ANTH 607 Historical Archaeology****Credits 3. 3 Lecture Hours.**

Past and present theoretical positions and research strategies in historical archaeology.

Prerequisite: ANTH 313 recommended.**ANTH 608 Skills in Maritime Archaeology****Credits 3. 3 Lecture Hours.**

Themes and tools of maritime archaeology; topics include remote sensing and mapping as well as interpreting, recording and storing data used in maritime archaeological surveys.

Prerequisites: Graduate classification; approval of instructor.**ANTH 609 Culture and Evolution****Credits 3. 3 Lecture Hours.**

This seminar will seek to integrate the study of culture with the natural sciences. The foundation of the course is the assumption that culture is a biological adaptation and that we can examine it scientifically.

ANTH 610 Outfitting and Sailing the Wooden Ship 1400-1900**Credits 3. 3 Lecture Hours.**

Archaeological and historical sources to examine the outfitting and sailing of wooden ships between 1400 and 1900, a period popularly known as the "Age of Sail"; emphasis on two aspects that are of particular interest to the nautical archaeologist.

Prerequisites: Approval of instructor; graduate classification.**ANTH 611 Nautical Archaeology****Credits 3. 3 Lecture Hours.**

Introduction to the history and theoretical basis of nautical archaeology as a discipline; fundamental concepts in nautical science relevant to the history of seafaring; key developments in the history of seafaring.

Prerequisites: Approval of instructor and graduate classification.**ANTH 612 Preclassical Seafaring****Credits 3. 3 Lecture Hours.**

Seafarers and watercraft of the ancient Near East and Mediterranean until ca. 700 B.C. Types of watercraft used, routes, cargoes, voyages of exploration and economics of maritime trade.

ANTH 613 Classical Seafaring**Credits 3. 3 Lecture Hours.**

Culture history of Mediterranean seafarers between ca. 700 B.C. and end of Byzantine Empire; types of ships and boats, sea law, naval tactics, harbor-works, routes, cargoes and economics of trade.

ANTH 614 Books and Treatises on Shipbuilding**Credits 3. 3 Lecture Hours.**

Examines a group of theoretical books of shipbuilding from the early 15th to the early 19th century; an overview of the theory and conceptual models with which ships were designed and built from the Renaissance to the 19th century.

Prerequisite: ANTH 616.**ANTH 615 History of Shipbuilding Technology****Credits 3. 3 Lecture Hours.**

Design and construction of preserved and excavated sailing ships, the expertise of their builders and technology involved in ancient and early shipbuilding.

Prerequisite: Approval of instructor.**ANTH 616 Research and Reconstruction of Ships****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Techniques of recording and interpreting excavated ships; preservation of hulls; ship drafting, modeling, lofting, testing and other methods used in the research and/or reconstruction of ships.

Prerequisite: Approval of instructor.**ANTH 617 Conservation III--Preservation of Organic Materials****Credits 3. 3 Lecture Hours.**

Advanced and experimental methods of organic artifact conservation; emphasis on composite artifacts, gamma radiation polymerization, scanning electron microscope evaluation of artifacts and preservation of traditionally difficult to conserve artifacts.

Prerequisite: ANTH 605.**ANTH 618 Medieval Seafaring in the Mediterranean****Credits 3. 3 Lecture Hours.**

Cultural history of seafaring in the Mediterranean region during medieval times; ship types and their uses, naval warfare, sea law, harborworks, routes and cargoes, and maritime economic institutions and practices.

Prerequisite: Approval of instructor.**ANTH 619 Indians of Texas****Credits 3. 3 Lecture Hours.**

Detailed study of diverse native/immigrant Texas Indian lifeways/cultures from late pre-European to contemporary times; exploration of historical underpinnings, traditional cultures, especially land-use patterns; detailed assessment of tribal relationships with colonial powers, U.S., Texas governments as evidenced in ethnographic, ethnohistoric, historical materials; application to anthropological, archaeological, and human ecology research.

Prerequisite(s): Graduate classification, ANTH 602, or ANTH 604, or 620, or 650.**ANTH 620 Prehistory of Texas****Credits 3. 3 Lecture Hours.**

Survey of Texas prehistory from initial migration of human population 11,500 years ago to extermination or removal of Native American cultures by Europeans; processes of cultural adaptation and change to shifting environments and subsistence material correlates of world views and belief systems.

ANTH 622 Folklore Forms and Methods**Credits 3. 3 Lecture Hours.**

Introduction to major genres of folklore, various theories and approaches employed by researchers, and specialized resource materials in the humanities and social sciences.

Prerequisites: Graduate classification in liberal arts and approval of instructor.**ANTH 623 Folk Narrative****Credits 3. 3 Lecture Hours.**

Theories and techniques used in the study of major folk narrative genres; folktale and legend; brief survey of other narrative forms, including tall tale, epic, myth, joke, personal and family narratives.

Prerequisites: Graduate classification in liberal arts and approval of instructor.**ANTH 624/GEOG 687 Geoarchaeology****Credits 3. 3 Lecture Hours.**

Application of geological concepts and methods to archaeological research; history of geoarchaeology; site formation processes; modification of archaeological sites and sediments; landscape reconstruction and change and their effects on human behavior.

Prerequisite: ANTH 602 or equivalent.**Cross Listing:** GEOG 687/ANTH 624.**ANTH 625 Zooarchaeology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Analysis of animal bones from archaeological sites; inference of how prehistoric peoples hunted, domesticated and used animals.

Prerequisite: Basic knowledge of zoology and archaeology.**ANTH 626 Human Paleopathology****Credits 3. 3 Lecture Hours.**

Pathological lesions exhibited in prehistoric or early historic human remains; problems in diagnosing lesions in fossil skeletal remains, and evaluating the occurrence of these lesions in past populations.

Prerequisite: ANTH 425.**ANTH 627 Human Paleonutrition****Credits 3. 3 Lecture Hours.**

Evaluation of past human diets and subsistence patterns from the perspective of research in archaeology, zooarchaeology, ethnobotany, bioarchaeology and cultural anthropology.

Prerequisite: 6 hours of advanced courses in anthropology or approval of instructor.**ANTH 628 New World Seafaring****Credits 3. 3 Lecture Hours.**

Cultural history of seafaring in the Western Hemisphere from the fifteenth century to the present; ship types and their uses; harborworks, commerce, naval warfare, sailing routes, maritime practices.

Prerequisites: ANTH 615 and ANTH 616 or approval of instructor.**ANTH 629 Post-Medieval Seafaring****Credits 3. 3 Lecture Hours.**

Cultural history of European seafaring from the fifteenth century to the early twentieth century; ship types and their uses, shipping routes and cargoes, maritime technology and economic institutions, seafaring practices, and naval warfare.

Prerequisites: ANTH 615 and ANTH 616 or approval of instructor.

ANTH 630 Human Evolutionary Ecology**Credits 3. 3 Lecture Hours.**

Evolutionary ecology of human behavior and culture, including habitat choice and use of space, time allocation, resource acquisition and allocation, sex and reproduction, altruism and cooperation and the coevolution of genes and culture.

Prerequisite: Graduate classification.**ANTH 631 Primate Behavioral Ecology****Credits 3. 3 Lecture Hours.**

Survey the behavioral ecology of the nonhuman primates exploring topics such as their hunting behavior; sexual coercion; language capabilities; culture; tool use; homosexuality; dominance; parental care, ethics of field study and their conservation.

Prerequisite: Graduate classification.**ANTH 632 Archaeology of Death****Credits 3. 3 Lecture Hours.**

Ethnographic and archaeological literature regarding human funerary behavior; emphasis on theoretical developments in the interpretation of burials for reconstructing social organization and social change; examine how mortuary practices and archaeological excavation define the burial assemblages studied by bioarchaeologists.

Prerequisite: Graduate classification.**ANTH 633 Deep Submergence Archaeology****Credits 3. 3 Lecture Hours.**

Addresses issues in the new field of deep submergence archaeology by examining the discipline's history, technologies, specific case studies of ship wrecks in deep water and related topics. Students will interact with leaders in the field via video conferencing and visiting lecturers.

Prerequisite: Approval of instructor.**ANTH 634 Palynology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Principles and techniques used in palynology, pollen morphology, ontogeny, biochemistry, dispersion and preservation; role of palynology as a research tool in plant taxonomy agriculture, medicine, paleobotany and anthropology.

ANTH 635 Violence and Warfare**Credits 3. 3 Lecture Hours.**

The anthropological study of violence and warfare and the place of these phenomena in cultural evolution, religion, economics, politics and social structure; particular attention paid to the rise of industrialized warfare and its impact on the pre-industrial world.

Prerequisite: Graduate classification.**ANTH 636 Computer Graphics in Archaeology****Credits 3. 3 Lecture Hours.**

Focuses on the acquisition, manipulation, and presentation of archaeological data and images; a variety of state-of-the-art technologies will be employed to develop professional desktop publications, slide and digital presentations, electronic publications and images.

Prerequisite: Graduate classification.**ANTH 637 Paleoethnobotany****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Interrelationship between plants and humans from prehistoric times to present, theoretical and methodological use of botany as a research tool for the understanding of cultural systems.

ANTH 638 Proposal Writing in Anthropology**Credits 3. 3 Lecture Hours.**

Workshop class designed to assist advanced doctoral students in writing research grant proposals to fund their dissertation projects. Students will craft their own NSF-style Dissertation Improvement proposals, should be prepared to accept constructive criticism of their work, and to offer it on the work of their classmates.

Prerequisites: G8 standing and approval of instructor.**ANTH 639/WGST 639 Gender, Ethnicity and Class in Archaeological Research****Credits 3. 3 Lecture Hours.**

Explores theoretical and methodological issues in engendering archaeology; ideological biases in the interpretation of roles attributed to women, men and underrepresented groups in the past; the impact of cultural transformations on underrepresented groups and gender relations; and how to formulate research questions concerning these issues.

Prerequisite: Graduate classification.**Cross Listing:** WGST 639/ANTH 639.**ANTH 640 Anthropological Ethics and Professionalism****Credits 3. 3 Lecture Hours.**

Codes of professional ethics applicable to excavation and preservation of archaeological sites; ethnographic fieldwork and professional relationships with colleagues and informants; professional protocols for publication and presentation of research results.

Prerequisites: Graduate classification in anthropology and approval of instructor.**ANTH 641 Applied Anthropology****Credits 3. 3 Lecture Hours.**

Theory, ethics and practical applications of anthropological methods and concepts as they relate to planned programs of socio-cultural change.

ANTH 642 Research Design in Anthropology**Credits 3. 3 Lecture Hours.**

Research design used by anthropologists to develop sampling strategies, test hypotheses and compile quantitative data.

Prerequisite: ANTH 602.**ANTH 643 Australopithecine Paleoeology****Credits 3. 3 Lecture Hours.**

Principles and techniques used in the reconstruction of paleoeology and paleoenvironments associated with the African australopithecines; including taphonomy, faunal evolution, climate forcing analysis, habitat preference and land-use patterns; detailed overview of the australopithecine fossil record from the Miocene to the Pleistocene.

Prerequisite: Graduate classification.**ANTH 644 Classical Archaeology****Credits 3. 3 Lecture Hours.**

History of the discipline through the individuals, organizations, excavations, theoretical models and ethical issues that have shaped it.

Prerequisite: Graduate classification.**ANTH 645 Cultural Resources Management****Credits 3. 3 Lecture Hours.**

History of cultural resources management (CRM): current federal and state laws and regulations; methods of determining site significance; the stages of CRM investigations; and the preparation of research designs and proposals; ethical issues such as curation and the treatment of human remains discussed.

Prerequisite: Graduate classification.

ANTH 646 Ceramic Artifact Analysis**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

The introduction of the basic concepts, methods, and approaches used in the analysis of archaeological pottery with a focus on the techniques and theories used to bridge the gap between the recovery of ceramic artifacts and their interpretation within various anthropological contexts.

Prerequisite: Graduate classification.**ANTH 647 Lithic Artifact Analysis****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Laboratory-based course reviewing methods archaeologists use to analyze stone tools and debitage, including identification of tool-stone sources, reconstruction of technology, explanation of assemblage variability, and microscopic use-wear analysis.

Prerequisite: Graduate classification and approval of instructor.**ANTH 648 Issues in Human Evolutionary Theory****Credits 3. 3 Lecture Hours.**

Examination of core concepts and theories in evolutionary biology and paleoanthropology, including human evolution, the species concept, and the role of the human fossil record.

Prerequisite: Graduate classification.**ANTH 649 Origin and Evolution of the Genus Homo****Credits 3. 3 Lecture Hours.**

Survey of the human fossil record with a focus on Plio-Pleistocene specimens assigned to our own genus, *Homo*; provides an overarching picture of the evolutionary history of humans after the Australopithecines and reviews theoretical issues that have influenced our understanding of the evolution of *Homo sapiens*.

Prerequisite: Graduate classification or approval of instructor.**ANTH 650 Ethnographic Field Methods****Credits 3. 3 Lecture Hours.**

Methods common to anthropology for the field collection of data on cultural behavior.

Prerequisites: Graduate classification and approval of instructor.**ANTH 651 Pleistocene Prehistory of Northeast Asia and Alaska****Credits 3. 3 Lecture Hours.**

Survey of the Ice-Age paleoenvironments, prehistory and paleoanthropology of Siberia, China, Japan, and Bering Land Bridge area, especially in the context of human colonization of the region and origins of the first Americans.

Prerequisite: Graduate classification.**ANTH 652 First American Archaeology****Credits 3. 3 Lecture Hours.**

Survey of past frontiers in First American studies important to the peopling of the Americas: review of the archaeology, geology, and dating of early sites in North, Middle, and South America; human migration hypotheses; biological evidence; and late Quaternary environmental factors.

Prerequisite: Approval of instructor.**ANTH 653 Hunter-Gatherer Archaeology****Credits 3. 3 Lecture Hours.**

Overview of development of hunter-gatherer archaeology; current methodological and theoretical issues, especially use of ethnographic and environmental data; ecologically oriented case studies of late Pleistocene and Holocene hunter-gatherers; emphasis on land-use, site-structure, and site formation analyses, especially in North America.

Prerequisites: ANTH 602 or ANTH 604 or approval of instructor.**ANTH 654 Archaeological Photography****Credits 3. 3 Lecture Hours.**

Instruction on how to better use cameras in the process of reporting archaeological sites and material culture by exploring old and new photographic technologies.

Prerequisite: Graduate classification.**ANTH 655 Empires and World-System****Credits 3. 3 Lecture Hours.**

Application of the anthropological perspective to the problem of the rise of empires and the modern world-system over the last 600 years of world history; topics include ecocide, ethnocide, ethnogenesis and warfare.

ANTH 656 Ancient Foodways and Cooking Technology**Credits 3. 3 Lecture Hours.**

Study of ancient foodways and cooking technologies, particularly fire-based methods, especially in the context of human evolution, subsistence and settlement behavior, social organization, theoretical underpinnings, and archaeological manifestations thereof, with the focus on ancient hunter-gatherer populations, wild plants, terrestrial animals, and aquatic resources.

Prerequisite: ANTH 602 or ANTH 604 or approval of Instructor.**ANTH 657 Topics in Technological Organization****Credits 3. 3 Lecture Hours.**

Review of current problems in the study of artifact assemblages; focus on theory explaining variability in artifact forms and technologies, especially in the contexts of subsistence and settlement behavior as well as exchange and social organization; alternating sections focus on lithic or ceramic technologies. May be taken two times for credit.

Prerequisite: Graduate classification or approval of instructor.**ANTH 658 Quantitative Ethnographic Methods****Credits 3. 3 Lecture Hours.**

Quantitative data collection and analytical methods employed by anthropologists including standardized observation, structured interviews, demography and network analysis; emphasizes hands-on assignments involving data collection among local community.

Prerequisite: Graduate classification.**ANTH 659 The Paleolithic World****Credits 3. 3 Lecture Hours.**

Survey of the Paleolithic archaeological record, beginning with the Oldowan and ending with the Upper Paleolithic and dispersal of modern humans to Australia and the Americas; review of major changes in technology, subsistence and land-use strategies that shaped the Paleolithic World.

Prerequisite: Graduate classification or approval of instructor.**ANTH 660 Field Archaeology****Credits 1 to 12. 1 to 12 Other Hours.**

Field instruction in the methods of archaeological excavations; recovery and cataloging of cultural, floral and faunal remains; and interpretation of these data. Locations of the field course will vary according to site. Field trips required. May be taken more than once but not to exceed 8 hours of credit toward an MA degree and not to exceed 12 hours of credit toward a PhD degree.

Prerequisite: ANTH 602 or equivalent.**ANTH 661 Environmental Archaeology****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Examination of the paleoecological context in which past humans interacted with the natural environment; review of advanced principles, method and theory, and practical applications used in paleoenvironmental reconstruction.

Prerequisite: Graduate classification or approval of instructor.

ANTH 662 Method and Theory in the Peopling of the Americas**Credits 3. 3 Lecture Hours.**

Interdisciplinary review of current evidence from the fields of archaeology, genetics, biological anthropology and paleoecology for the dispersal of modern humans to the New World during the Pleistocene; understanding theory and method used to explain prehistoric human migration and colonization of empty lands.

Prerequisite: Graduate classification or approval of instructor.**ANTH 666 The Neanderthals****Credits 3. 3 Lecture Hours.**

Origin and evolution of Neanderthals.

Prerequisite: Graduate classification.**ANTH 667 Human Variation****Credits 3. 3 Lecture Hours.**

Biological basis of variation in the physical features of modern humans; details of anatomical and physiological differences of living populations to understand their adaptive and historical significance; history of human variation studies rooted in the historical notion of "race".

Prerequisite: Graduate classification or approval of instructor.**ANTH 670 Bridging Theme Seminar in Anthropology****Credits 3. 3 Lecture Hours.**

Examination of topics that bridge two or more subfields in anthropology, including studies of diasporas, dispersals and migration; evolution and ecology; material culture and technology; and food, nutrition, and culture. May be taken three times for credit.

Prerequisite: Graduate classification.**ANTH 672 Ancient Genetics****Credits 3. 3 Lecture Hours.**

Ancient DNA and its role in answering anthropological and archaeological questions.

Prerequisite: Graduate classification or approval of instructor.**ANTH 680 Teaching Anthropology****Credits 0. 0 Lecture Hours.**

Introduction to course planning for future instructors of anthropology; includes course design, student motivation and engagement, assessment of design and implementation and technology use in education.

Prerequisites: Graduate classification; admission to graduate program in the Department of Anthropology.**ANTH 684 Anthropology Internship****Credits 3 to 9. 3 to 9 Other Hours.**

Opportunity to put anthropology learned in the classroom into practice; may be used to gain practical experience in a variety of settings including: local, state or federal agencies; museums; non-profit organizations; non-governmental organizations; and private firms.

Prerequisites: ANTH 601, ANTH 602, ANTH 604 or ANTH 602, ANTH 615, ANTH 616; approval of committee chair.**ANTH 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Directed individual study of selected problems in anthropology.

Prerequisite: Approval of instructor.**ANTH 689 Special Topics in...****Credits 1 to 12. 1 to 12 Lecture Hours.**

Selected topics in an identified area of anthropology. May be repeated for credit.

Prerequisite: Approval of instructor.**ANTH 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

Prerequisite: Approval of graduate advisor.

ARCH - Architecture

ARCH 600 Introduction to Architecture and Urban Design**Credits 2. 1 Lecture Hour. 1 Lab Hour.**

Introductory seminar and studio on architecture and urban design; focus on topical readings, in-class discussions and short writing exercises; provides opportunity to learn or refine hand drawing, rendering, and model building, and to learn to be productive and creative within the studio context.

Prerequisite: Graduate classification in architecture or approval of instructor.**ARCH 601 Design Fundamentals I****Credits 6. 3 Lecture Hours. 9 Lab Hours.**

Introduction to the development of verbal (design vocabulary), graphic, research and critical thinking skills through the design of small-scale projects, and investigation of typologies and precedents as the basis for architectural design.

Prerequisites: Graduate classification in architecture or approval of instructor; career change program, ARCH 600 and concurrent enrollment in ARCH 610.**ARCH 602 Design Fundamentals II****Credits 6. 3 Lecture Hours. 9 Lab Hours.**

Further development of verbal, graphic, research and critical thinking skills through architectural design projects, with emphasis on basic understanding of major philosophical doctrines and their influence on architectural theory; studies of place-making, space, form and order; knowledge of world views, formal spatial manipulations and design vocabulary.

Prerequisites: ARCH 601, ARCH 610, ARCH 612 or approval of instructor.**ARCH 603 Design Fundamentals III****Credits 6. 3 Lecture Hours. 9 Lab Hours.**

Theory and practice of architecture; methods and techniques used in the analysis and synthesis of concepts unique to spatial enclosure; developing responses to building systems; objects in a current cultural, physical or social context; complex building programs, site development and design solutions integrating formally expressive visual ideas and functional planning.

Prerequisite: ARCH 602.**ARCH 605 Architectural Design I****Credits 6. 2 Lecture Hours. 12 Lab Hours.**

Application of verbal, graphic, research, critical thinking and fundamental design skills to architectural projects that emphasize design theory, systems of ordering in architecture and urban design, use of precedents, site and contextual issues; includes program development and concerns for public health, safety and welfare. Core design studio for professional degree candidates.

Prerequisite: Graduate classification in architecture or approval of instructor.

ARCH 606 Architectural Design II**Credits 6. 2 Lecture Hours. 12 Lab Hours.**

Application of verbal, graphic, research, critical thinking and fundamental design skills to architectural projects that emphasize the integration of structural, environmental, life safety, building envelope systems, and building service systems; includes code compliance, resource conservation, cost control and economic analysis. Core design studio for professional degree candidates.

Prerequisite: ARCH 605.**ARCH 607 Architectural Design III****Credits 6. 2 Lecture Hours. 12 Lab Hours.**

Application of verbal, graphic, research, critical thinking and comprehensive design skills to advanced architectural projects or design competitions that address cultural traditions, human behavior and diversity, the context of architecture, collaborative skills, ethics and professional judgement. Core design studio.

Prerequisite: ARCH 606.**ARCH 608 Architectural Design IV****Credits 6. 2 Lecture Hours. 12 Lab Hours.**

Individually selected design project of major architectural significance and complexity; professional documentation required; project requires approval of instructor.

Prerequisite: ARCH 607 or equivalent.**ARCH 610 Visual Communications****Credits 3. 2 Lecture Hours. 4 Lab Hours.**

Investigation and practice of various communication techniques used to explore, verify and present design decisions in architecture; freehand drawing principles; graphic theory and mechanical drawing techniques; architectural presentation and rendering methods in different media and their application.

Prerequisite: Graduate classification or approval of instructor; concurrent enrollment in ARCH 601.**ARCH 612 Structural and Environmental Technology Concepts****Credits 3. 3 Lecture Hours.**

An introductory course which is intended to quickly and broadly develop the vocabulary base, visual understanding and familiarity with technological systems that architects deal with throughout their practice.

Prerequisites: Graduate classification or approval of instructor; MATH 142 and PHYS 201 or equivalents.**ARCH 614 Elements of Architectural Structures****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Investigation of the structural factors that influence the development of architectural space and form; introduction of the physical principles that govern statics and strength of materials through design of timber and steel components of architectural structures.

Prerequisite: ARCH 612 or approval of instructor.**ARCH 615 Elements of Environmental Control Systems****Credits 3. 3 Lecture Hours.**

Theory and applications of building energy use, envelope design, shading analysis, heating and cooling systems, lighting design, building water supply plumbing and drainage systems, electrical, acoustical, fire and lightning protection, transportation systems and construction materials; design opportunities, calculations, equipment selection, and component sizing as they relate to design.

Prerequisite: ARCH 612 or approval of instructor.**ARCH 619 Applied Solar Energy****Credits 3. 3 Lecture Hours.**

Technology behind applied solar energy design, including: calculating solar radiation, heat transfer related to solar design; active systems; FCHART and economics.

Prerequisite: Graduate classification or approval of instructor.**ARCH 620 Building Performance Measurement****Credits 3. 3 Lecture Hours.**

Performance measurement strategies for buildings, including: instrumentation and sensors, data collection and data management, weather data requirements, regression or inverse data analysis methods, calibrated whole-building energy simulation, calibrated simplified HVAC system simulation; measurement and analysis of indoor environmental conditions and building water use; baseline strategies; state and federal standards; case studies of commercial building applications.

Prerequisite: Graduate classification or approval of instructor.**ARCH 621 Energy Optimization in Building Design****Credits 3. 3 Lecture Hours.**

Optimum energy use strategies for commercial buildings, hourly energy simulation methods, building envelope and HVAC system energy optimization by computer simulation techniques; life-cycle cost analysis of building energy systems; case studies in commercial building applications.

Prerequisite: Graduate classification or approval of instructor.**ARCH 622 Sustainable Building Design Technology****Credits 3. 3 Lecture Hours.**

Fundamentals of sustainability in building, including social, political and economic issues—focusing particularly on conservation of natural resources; design and construction of earth integrated solar buildings, including cooling, heating, lighting and habitability assessments.

Prerequisite: Graduate classification or approval of instructor.**ARCH 623 Design Methods I****Credits 3. 3 Lecture Hours.**

Importance of intuitive methods in design; meaning, symbolism and creativity in art and architecture; techniques to develop creative approaches to problem-solving.

Prerequisite: Graduate classification or approval of instructor.**ARCH 624 Theory of Placemaking****Credits 3. 3 Lecture Hours.**

An introduction to and an exploration of the sources, principles, theories, and physical expressions of the phenomenon of place creation and its relationship to sustainable urbanism; investigates the origin of place theory and its meaning as expressed in the various forms, functions and scales of places applicable to architecture and planning.

Prerequisite: Graduate classification or approval of instructor.**ARCH 628 Tools for Green Building Design****Credits 3. 3 Lecture Hours.**

Modeling tools and techniques to explore and support sustainable design; develop a deeper understanding of the relationship between architectural design and the environmental forces of sun, wind, and light; design-centered course; helps test the students architectural designs through the use of available modeling tools.

Prerequisite: Graduate classification or approval of instructor.**ARCH 631 Applied Architectural Structures****Credits 3. 3 Lecture Hours.**

Structural analysis of building structural systems: components, frames, shapes; selection and economics of structural systems; survey of current structural design codes; supervision practices in structural construction.

Prerequisite: Graduate classification or approval of instructor.

ARCH 633 Applied Architectural Systems**Credits 3. 3 Lecture Hours.**

Building energy consumption patterns and conservation strategies; natural and mechanical subsystems for environmental control; subsystem design criteria, economic considerations and selection methods.

Prerequisite: Graduate classification or approval of instructor.**ARCH 634 Architectural Lighting****Credits 3. 3 Lecture Hours.**

Attributes of the lighting environment, lighting and energy issues, daylight availability, building design for daylighting, heat loss control, solar shading, daylighting models, graphical analytical and computer methods of analysis, visual and lighting comfort evaluation, integration of daylight and electric light, energy analysis.

ARCH 637 Seminar in Japanese Architecture History and Theory**Credits 3. 3 Lecture Hours.**

Background and exploration of traditional, modern, and contemporary Japanese architecture, including consideration of region, materials, structure and style, as well as the social and economic factors that include architectural form and contents; discussion of the works and writings and building models of case study of Japanese architects' design.

Prerequisite: Graduate classification or approval of instructor.**ARCH 638 Architectural Theory--Renaissance Through 19th Century****Credits 3. 3 Lecture Hours.**

Architectural Theory—Renaissance Through 19th Century. Review of architectural theory and practice from the 15th to 19th centuries with emphasis on the classical tradition, its transformations in France and in Great Britain and Germany; aspects of this evolution.

Prerequisite: Graduate classification or approval of instructor.**ARCH 639 Twentieth Century Architecture: Theory and Practice****Credits 3. 3 Lecture Hours.**

Background and exploration of Modern Architecture, including consideration of region, materials, structure and style, as well as the social and economic factors that influence architectural form and content; discussion of the work and writings of 20th century architects and architectural theorists.

Prerequisite: Graduate classification or approval of instructor.**ARCH 640 Morphology of Architectural Form****Credits 3. 3 Lecture Hours.**

Forces influencing structure and form of architecture: climate, culture, site, economics, construction methods.

Prerequisite: Graduate classification or approval of instructor.**ARCH 643 Software Analysis for HVAC Systems in Low Energy Buildings**
Credits 3. 2 Lecture Hours. 3 Lab Hours.

Energy analysis (using Energy Plus software) with an emphasis on developing strategies for low energy use; simulation of various heating and cooling systems in low energy buildings; analysis of the mechanical equipment (including air handling systems, chiller and boilers), the building envelope, energy management control systems and indoor air quality.

Prerequisite: Graduate classification or approval of instructor.**ARCH 644 Seminar in Art and Architectural History****Credits 3. 3 Lecture Hours.**

Advanced topics in art and architectural history emphasizing methods of analysis and development of theory, including case studies from both western and non-western traditions; topics vary each semester.

Prerequisite: Graduate classification or approval of instructor.**ARCH 645 Seminar in Architectural Theory****Credits 3. 3 Other Hours.**

Advanced topics in architectural theory emphasizing historical development and relation to practice, including case studies from both western and non-western traditions; topics vary each semester. May be taken three times for credit.

Prerequisites: Graduate classification or approval of instructor.**ARCH 646 Historic Preservation Theory and Practice****Credits 3. 3 Lecture Hours.**

History of the preservation movement in the U.S. Architectural and regulatory techniques employed in building preservation; case study of selected examples.

Prerequisite: Graduate classification or approval of instructor.**ARCH 647 Recording Historic Buildings****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Advanced techniques for recording historic buildings; measuring and drawing to Historic American Building Survey Standards; field training in photography, laser scanning, photogrammetry, hand measuring, field notes and record drawing preparation.

Prerequisites: Graduate classification or approval of instructor.**ARCH 648 Building Preservation Technology****Credits 3. 3 Lecture Hours.**

Preservation technology related to the diagnosis and treatment of defects in buildings; case studies of significant historic structures. Field study may be required for which departmental fees may be assessed to cover costs.

Prerequisite: ARCH 646 or approval of instructor.**ARCH 649 Advanced History of Building Technology****Credits 3. 3 Lecture Hours.**

Readings and discussion of current topics in history of building technology; development of understanding the importance of materials of construction to the creation of historical forms of sacred architecture across faith and around the world.

Prerequisite: Graduate classification or approval of instructor.**ARCH 653 Building Information Modeling in Architecture****Credits 3. 3 Lecture Hours.**

Building Information Modeling (BIM); principles, methods and applications in the building lifecycle with a focus on the design process; includes computer-aided design, parametric modeling, databases, web technologies, design performance simulation and visualization.

Prerequisites: Graduate classification or approval of instructor.**ARCH 655 Parametric Modeling in Design****Credits 3. 3 Lecture Hours.**

Parametric modeling principles, methods and applications in environmental design and research; architectural geometry at basic and advanced levels; parametric equations and models; visual programming method; scripting method; constraints, rules and algorithms; elements and patterns of parametric design; parametric simulation; modeling tools.

Prerequisite: Graduate classification or approval of instructor.**ARCH 657 Advanced Professional Practice and Ethics****Credits 3. 3 Lecture Hours.**

Issues and relationships within the business, legal and political environment; legal forms of practice; office organization, personnel practices, policies and management; expanded services; economics of practice, profit planning and accounting; client selection; standard form agreements with consultants and for specialized services, risk management.

Prerequisites: Graduate classification or approval of instructor.

ARCH 659 Digital Architectural Photography**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Study of equipment, processes and procedures for photography of building exteriors and interiors.

Prerequisites: Graduate classification or approval of instructor.

ARCH 660 Design Programming**Credits 3. 3 Lecture Hours.**

Study of successful programming approaches to meet user needs in design projects; history and definition of programming, programming techniques, documentation and case studies; applications to buildings, landscape projects and urban design.

Prerequisite: Graduate classification or approval of instructor.

ARCH 663 Interior Architecture**Credits 3. 3 Lecture Hours.**

Theory and application of design processes incorporating programming, space planning, analysis and communication of interior requirements for various building types with emphasis on spatial organization, selection of components and materials to satisfy user needs; emphasis on design of the workplace as the synthesis of human factors, organizational theory, systems technology and communication.

Prerequisite: Graduate classification or approval of instructor.

ARCH 664 Urban Design for Architects**Credits 3. 3 Lecture Hours.**

Investigation of the creative role in architectural ideas in the design process and their manifestation in successful urban design; identification and evaluation of urban design examples that are at the leading edge of architectural practice and anticipate the future; consideration of neighboring, local, regional levels, social and economic factors that influence urban form and fabric; discussion of the works and writings and the case study of livable urban design.

Prerequisite: Graduate classification or approval of instructor.

ARCH 669 Foundations of Research in Architecture**Credits 3. 3 Lecture Hours.**

Introduction to the research process and its application to problems in architecture; survey of current literature on research design methods relevant to diverse architectural problems; qualitative and quantitative research strategies and techniques; communicating research results. May be taken two times for credit.

Prerequisites: Graduate classification; concurrent enrollment in ARCH 681 and ARCH 690.

ARCH 673 Design for Active Living**Credits 3. 3 Lecture Hours.**

Understanding the forms and characteristics of the built environment and the influence on human behaviors, lifestyles and health; theoretical and empirical insights into the issues of physical activity, obesity and automobile dependency; focus on how changes in the built environment help address these issues.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: LAND 632 and PLAN 632.

ARCH 674 Typologies of Contemporary Hospital Design**Credits 3. 3 Lecture Hours.**

Introduction to the contemporary planning of hospitals; comparisons of hospital design by contemporary practitioners; best practice models, repetitive patterns, and innovative designs.

Prerequisite: Graduate classification or approval of instructor.

ARCH 675 Health Design and Research**Credits 3. 3 Lecture Hours.**

Examination of health environments to include buildings, healthcare gardens and restorative landscapes, and urban design for home-based care and independent living; emphasis on research-informed approaches for patient-centered design that reduce stress and promote improved health outcomes.

Prerequisite: Graduate classification or approval of instructor.

ARCH 676 Survey of Human Behavior and Design**Credits 3. 3 Lecture Hours.**

Examination of human behavior and attitudes that influence spatial decision making; includes sections on environment and behavior, real estate finance, urban design decision making.

Prerequisite: Graduate classification or approval of instructor.

ARCH 677 Neuroscience and Architecture**Credits 3. 3 Lecture Hours.**

Advanced introduction to the field of experimental psychophysiology with applications taken primarily from the field of environmental psychology and supplementing with examples from the fields of social and cognitive neuroscience; exposure to the foundations, principles and selected applications of neuroscience.

Prerequisite: Approval of instructor.

ARCH 678 Foundations of Healthcare Design**Credits 3. 3 Lecture Hours.**

Introduction to the theory of healthcare design over the course of time; exploration of the relationship of the medicine, science, art, and culture of each period with the design of buildings and environments for healthcare; emphasis on historic periods and the contemporary.

Prerequisite: Graduate classification or approval of instructor.

ARCH 681 Seminar**Credit 1. 1 Lecture Hour.**

Discussion and review of current practice in architecture and environmental design.

Prerequisite: Graduate classification or approval of instructor.

ARCH 684 Professional Internship**Credits 1 to 8. 1 to 8 Other Hours.**

Professional practice under approved arrangement with public or private agencies or in residence to complement academic coursework and to provide the basis for, and allow the preparation of, an appropriate report.

Prerequisite: Graduate classification or approval of instructor and department head.

ARCH 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Individual problems involving application of theory and practice in design and construction of buildings and groups of buildings.

Prerequisite: Graduate classification or approval of instructor and department head.

ARCH 689 Special Topics in...**Credits 1 to 6. 1 to 6 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified field of architecture. May be repeated for credit.

Prerequisite: Graduate classification or approval of instructor or department head.

ARCH 690 Research Ideologies for Architecture**Credits 3. 3 Lecture Hours.**

Design of research in architecture; evaluation of research methodologies from current research literature.

Prerequisite: Graduate classification or approval of instructor and department head.**ARCH 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for and preparation of dissertation.

Prerequisite: Graduate classification or approval of instructor and department head.**ARCH 693 Professional Study****Credits 1 to 23. 1 to 23 Other Hours.**

Application of verbal, graphic, research and critical thinking skills to an approved, individually selected architectural issue or design project that will advance the broad understanding of architecture and its impact on people. The terminal requirement for the Master of Architecture degree. May be taken more than once but not more than 6 hours used toward a degree.

Prerequisites: ARCH 605, ARCH 606, ARCH 607; proposal approval.

ASTR - Astronomy

ASTR 600 Order-of-Magnitude Astrophysics**Credit 1. 1 Lecture Hour.**

Introduction to the utility of order of magnitude calculations and the ability to think intuitively; short overviews of basic physical concepts followed by interactive activities and problem solving at the board.

Prerequisite: ASTR 314 or equivalent, or approval of instructor.**ASTR 601/PHYS 641 Extragalactic Astronomy****Credits 3. 3 Lecture Hours.**

Overview of observations of galaxies and large-scale structures in the Universe to understand their formation and evolution from theoretical and observational perspectives; galaxy luminosity functions; evolution of stellar populations and chemical enrichment; clusters and AGN.

Prerequisites: PHYS 601; or ASTR 314 and PHYS 302; or approval of instructor.**Cross Listing:** PHYS 641/ASTR 601.**ASTR 602/PHYS 642 Astronomical Observing Techniques and Instrumentation****Credits 3. 3 Lecture Hours.**

Theory and practice of obtaining and analyzing astrometric, photometric, spectroscopic, and interferometric measurements of astronomical sources across the electromagnetic spectrum; principles of design, fabrication, assembly, test, deployment, and use of astronomical instruments.

Prerequisites: PHYS 615 or equivalent; or approval of instructor.**Cross Listing:** PHYS 642/ASTR 602.**ASTR 603/PHYS 643 Stellar Astrophysics****Credits 3. 3 Lecture Hours.**

Theoretical and observational aspects of stellar astrophysics; thermodynamic properties of stellar interiors; energy sources; nuclear processes and burning stages; convective and radiative energy transport; evolutionary models; atmospheres; stability and pulsations; chemical enrichment processes; population synthesis.

Prerequisites: PHYS 606 and PHYS 607 or equivalents; or approval of instructor.**Cross Listing:** PHYS 643/ASTR 603.**ASTR 604/PHYS 644 Cosmology****Credits 3. 3 Lecture Hours.**

Basic principles of modern cosmology and particle physics; general relativity; cosmic inflation; Big Bang nucleosynthesis; expansion of the universe; cosmic microwave background; large-scale structure of the Universe; properties of particles; dark matter; dark energy.

Prerequisites: PHYS 615 or equivalent; or approval of instructor.**Cross Listing:** PHYS 644/ASTR 604.**ASTR 605/PHYS 645 Galactic Astronomy****Credits 3. 3 Lecture Hours.**

Basic nature and structure of constituents of Milky Way galaxy; distribution and motions of stars and gas; origin evolution and distribution of large-scale chemical abundances and kinematic patterns across populations; models of galaxy formation and implications of modern observations.

Prerequisites: PHYS 601 and PHYS 607 or equivalents; or approval of instructor.**Cross Listing:** PHYS 645/ASTR 605.**ASTR 606/PHYS 646 Radiative Transfer****Credits 3. 3 Lecture Hours.**

Fundamental radiative processes in stellar and planetary atmospheres; radiative fields; Stokes parameters; Mueller matrix formalism; radiation from moving charges; Compton scattering; plasma effects; atomic structure and radiative transitions; molecular structure and spectra; multiple scattering.

Prerequisites: PHYS 302, PHYS 304, PHYS 408, and PHYS 412 or equivalents; or approval of instructor.**Cross Listing:** PHYS 646/ASTR 606.**ASTR 681 Seminar****Credit 1. 1 Lecture Hour.**

Subjects of current importance; normally required of all graduate students in astronomy. May be repeated for credit.

ASTR 685 Directed Studies**Credits 1 to 9. 1 to 9 Other Hours.**

Individual problems not related to thesis.

Prerequisite: Approval of instructor.**ASTR 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of astronomy. May be repeated for credit.

Prerequisite: Approval of instructor.**ASTR 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research toward thesis or dissertation.

Prerequisite: Baccalaureate degree in physics or equivalent.

ATMO - Atmospheric Sciences

ATMO 601 Fundamentals of Atmospheric Dynamics**Credits 3. 3 Lecture Hours.**

Basic concepts of fluid dynamics; meteorological approximations and coordinate systems; simple models and wave motion; barotropic models.

Prerequisite: Approval of instructor.**ATMO 602 Atmospheric Physics I****Credits 3. 3 Lecture Hours.**

Integrated treatment of the dry and moist thermodynamics of the atmosphere, and cloud and precipitation microphysics.

ATMO 603 Quantitative Methods for the Atmospheric Sciences**Credits 3. 3 Lecture Hours.**

Mathematical and numerical methods applied to ODE's, PDE's and statistical methods; methods of analysis and modeling of atmospheric phenomena.

Prerequisites: Concurrent registration in ATMO 601 and CSCE 203 or equivalents.

ATMO 604 General Circulation and Climate**Credits 3. 3 Lecture Hours.**

Observed large scale circulation and climate of the earth; physical processes which maintain relevant budgets; models and theories explaining mean observations.

Prerequisite: ATMO 601.

ATMO 606 Atmospheric Chemistry I**Credits 3. 3 Lecture Hours.**

Fundamentals of atmospheric chemistry; tropospheric ozone, NO_x and HO_x cycling, sulfur chemistry, stratospheric chemistry, and aerosol composition; analytical measurement methods; review of chemical basics as needed.

ATMO 611 Atmospheric Dynamics II**Credits 3. 3 Lecture Hours.**

Continuation of ATMO 601; flow in planetary boundary layer; balanced flows; atmospheric instabilities; tropical dynamics.

Prerequisite: ATMO 601 or approval of instructor.

ATMO 612 Atmospheric Physics II**Credits 3. 3 Lecture Hours.**

Continuation of ATMO 602. Radiative transfer into the atmosphere.

Prerequisite: ATMO 602.

ATMO 613 Advanced Atmospheric Chemistry**Credits 3. 3 Lecture Hours.**

An advanced survey of fundamental atmospheric processes involving biogeochemical cycles, air pollution, tropospheric chemistry, atmospheric aerosols and stratospheric chemistry.

Prerequisite: ATMO 606.

ATMO 618 Numerical Methods for the Geosciences**Credits 3. 3 Lecture Hours.**

Mathematical theory and numerical techniques for modeling physical systems and processes in the Geosciences; discretization of continuum equations for solids and fluids; finite difference methods convergence, consistency, and stability; finite element and spectral methods in fluid dynamics and seismology; iterative solvers; implicit and explicit methods for diffusion and advection.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: GEOP 618 and OCNG 618.

ATMO 629 Climate Change**Credits 3. 3 Lecture Hours.**

Climate of the geological and recent past; methods of assessing climate and climatic change; mechanisms, models, theories, impact and prediction of climatic change.

Prerequisites: ATMO 324 or equivalent; approval of instructor.

ATMO 631 Climate Modeling**Credits 3. 3 Lecture Hours.**

A study of mathematical models used in the simulation of climate. Development and structure of selected members of the hierarchy of models ranging from energy balance models to general circulation models. Applications to paleoclimate and future climate scenarios.

Prerequisite: Approval of instructor.

ATMO 632 Statistical Methods in Climate Research**Credits 3. 3 Lecture Hours.**

Advanced techniques especially applicable to climatology; space-time random field analysis applied to stochastic models, parameter estimation, statistical forecasting, data interpolation and signal detection; applications to real data and climate model output.

Prerequisites: STAT 601 or equivalent; approval of instructor.

ATMO 636 Dynamic Meteorology**Credits 3. 3 Lecture Hours.**

General circulation; stratospheric dynamics; tropical systems.

Prerequisite: ATMO 611.

ATMO 638 Dynamics of Convective Clouds**Credits 3. 3 Lecture Hours.**

Parcel, slice and entrainment concepts; bubble and plume theories; spherical vortex; the starting plume; one-dimensional models; selected topics of current interest.

Prerequisite: ATMO 611.

ATMO 645 Cloud and Precipitation Physics**Credits 3. 3 Lecture Hours.**

Physics of atmospheric condensation nuclei, ice in the atmosphere; precipitation processes; artificial modification of clouds; precipitation.

Prerequisite: ATMO 612 or approval of instructor.

ATMO 651/OCNG 651 Dynamics of Ocean-Atmosphere Interaction**Credits 3. 3 Lecture Hours.**

Major features of the atmosphere and ocean; interaction between the two systems; coupled modes of variability in ocean-atmosphere system; dynamics of El Niño-Southern Oscillation and related phenomena in the tropics; extratropical ocean-atmosphere feedbacks.

Prerequisite: OCNG 608 or ATMO 601.

Cross Listing: OCNG 651/ATMO 651.

ATMO 655 Satellite Data in Meteorology**Credits 3. 3 Lecture Hours.**

Meteorological satellite programs of the United States and other countries; theory of meteorological measurements from artificial satellites; applications of satellite data in determinations of atmospheric structure and in forecasting; recent and current research studies; future programs.

Prerequisite: ATMO251 or approval of instructor.

ATMO 656 Tropical Meteorology**Credits 3. 3 Lecture Hours.**

Role of the tropics in global circulation; structure and dynamics of the tropical zone; local and diurnal phenomena; synoptic components; tropical cyclones; role of cumulus-scale convection; current topics.

Prerequisite: ATMO 251 or approval of instructor.

ATMO 657 Mesometeorology**Credits 3. 3 Lecture Hours.**

Theory and structure of mesoscale weather systems and their relation to larger and smaller scale systems.

Prerequisite: ATMO 251 or approval of instructor.

ATMO 658 Synoptic Meteorology**Credits 3. 3 Lecture Hours.**

Mechanism and energetics of general circulation. Structure of large-scale systems. Persons desiring practice in analysis techniques should enroll for 1 hour or more of ATMO 685.

Prerequisite: ATMO 251 or approval of instructor.

ATMO 659 Tropical Cyclones**Credits 3. 3 Lecture Hours.**

Tropical climatology; structure evolution and motion of tropical cyclones; tropical cyclone hazards; large scale tropical phenomena.

Prerequisite: ATMO 251.**ATMO 661 Atmospheric Turbulence****Credits 3. 3 Lecture Hours.**

Classical turbulence theories and statistical approaches; closure models; effects of rotation and stratification; interpretations of atmospheric observations.

Prerequisite: ATMO 611 or suitable background in fluid dynamics.**ATMO 664 Laboratory Methods in Atmospheric and Environmental Sciences****Credits 3. 2 Lecture Hours. 4 Lab Hours.**

Classroom and laboratory course; introduction to chemical techniques used to monitor the atmosphere and environment; instrumentation, sampling strategies; survey of current literature focusing on development of new techniques.

Prerequisite: Graduate classification.**ATMO 677/OCNG 677 Geophysical Data Assimilation****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Modern data assimilation methods applied to oceanic and atmospheric circulation models, as well as in other simple models; methods to interpolate one-, two-, and three-dimensional randomly spaced data to regular grids for use in numerical models of atmospheric and oceanic circulation.

Prerequisites: OCNG 657, ATMO 632, STAT 601.**Cross Listing:** OCNG 677/ATMO 677.**ATMO 681 Seminar****Credit 1. 1 Other Hour.**

Presented by students and faculty based upon their research work and upon surveys of the literature.

ATMO 685 Directed Studies**Credits 1 to 16. 1 to 16 Other Hours.**

Offered to enable majors in meteorology to undertake and complete, with credit, in their particular fields of specialization, limited investigations not covered by any other courses in established curriculum.

ATMO 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Special topics in an identified area of meteorology. May be repeated for credit.

ATMO 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

For thesis or dissertation. Topic subject to approval of department head.

ATTR - Athletic Training

ATTR 651 Clinical Education I**Credits 2. 1 Lecture Hour. 8 Lab Hours.**

Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 652 Clinical Education II****Credits 3. 1 Lecture Hour. 16 Lab Hours.**

Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.

Prerequisite: ATTR 651, ATTR 660, ATTR 661 with grades of C or better.**ATTR 653 Clinical Education III****Credits 3. 1 Lecture Hour. 16 Lab Hours.**

Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.

Prerequisite: ATTR 652, ATTR 662, ATTR 663, ATTR 668, ATTR 669 with grades of C or better.**ATTR 654 Clinical Education IV****Credits 2. 1 Lecture Hour. 8 Lab Hours.**

Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.

Prerequisite: ATTR 653 with a grade of C or better.**ATTR 655 Clinical Education V****Credits 3. 1 Lecture Hour. 16 Lab Hours.**

Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.

Prerequisite: ATTR 654, ATTR 664, ATTR 665, ATTR 671 with grades of C or better.**ATTR 656 Clinical Education VI****Credits 3. 1 Lecture Hour. 16 Lab Hours.**

Integration of clinical competencies with classroom instruction and a supervised field based experience in athletic training to link theory into practice.

Prerequisite: ATTR 655, ATTR 666, ATTR 667, ATTR 670 with grades of C or better.**ATTR 660 Prevention and Care of Athletic Injuries****Credits 3. 3 Lecture Hours.**

Prevention strategies and procedures, recognition and care of common injuries and conditions; foundational concepts and principles of the athletic training profession.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 661 Prevention and Care of Athletic Injuries Lab****Credit 1. 2 Lab Hours.**

Laboratory to accompany ATTR 660; application of theories and practice skills.

Prerequisite: Concurrent enrollment in ATTR 660.**ATTR 662 Clinical Examination and Diagnosis-Lower Extremity****Credits 3. 3 Lecture Hours.**

Pathomechanics, clinical examination, diagnosis and appropriate medical referral of orthopedic injuries and other conditions to the lower extremity and spine.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 663 Clinical Examination and Diagnosis-Lower Extremity Lab****Credit 1. 2 Lab Hours.**

Laboratory to accompany ATTR 662; application of theories and skill practice.

Prerequisites: Concurrent enrollment in ATTR 662; enrollment in MS Athletic Training program.

ATTR 664 Clinical Examination and Diagnosis-Upper Extremity**Credits 3. 3 Lecture Hours.**

Pathomechanics, clinical examination, diagnosis and appropriate medical referral of orthopedic injuries and other conditions to the upper extremity, head and cervical spine.

Prerequisite: ATTR 662.**ATTR 665 Clinical Examination and Diagnosis-Upper Extremity Lab****Credit 1. 0 Lecture Hours. 2 Lab Hours.**

Laboratory to accompany ATTR 664; application of theories and skill practice.

Prerequisites: Concurrent enrollment in ATTR 664; enrollment in MS Athletic Training program.**ATTR 666 Physical Rehabilitation****Credits 3. 3 Lecture Hours.**

The study of physical rehabilitation theory and techniques used as a therapeutic intervention for orthopedic injuries and conditions.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 667 Physical Rehabilitation Lab****Credit 1. 0 Lecture Hours. 2 Lab Hours.**

Laboratory to accompany ATTR 666; application of theories and skill practice.

Prerequisites: Concurrent enrollment in ATTR 666; enrollment in MS Athletic Training program.**ATTR 668 Therapeutic Modalities****Credits 3. 3 Lecture Hours.**

A detailed study of modern therapeutic devices used in the treatment and rehabilitation of orthopedic injuries and conditions.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 669 Therapeutic Modalities Lab****Credit 1. 0 Lecture Hours. 2 Lab Hours.**

Laboratory to accompany ATTR 668; application of theories and skill practice.

Prerequisites: Concurrent enrollment in ATTR 668; enrollment in MS Athletic Training program.**ATTR 670 General Medical Conditions and Therapeutic Medication****Credits 3. 3 Lecture Hours.**

Pathophysiology, assessment, and appropriate intervention and referral for general medical conditions and disabilities; common diagnostic tests and imaging assessment tools including commonly used therapeutic medications.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 671 Organization and Administration in Athletic Training****Credits 3. 3 Lecture Hours.**

Organization and administration of athletic training services including financial, human resources, facility, information technology and risk management.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 672 Professional Preparation and Issues in Athletic Training****Credits 3. 3 Lecture Hours.**

Knowledge and skills for successful pursuit of athletic training credentials, employment and continuing professional competencies; emphasis on current topics and issues contributing to the professional preparation of athletic training.

Prerequisite: Enrollment in MS Athletic Training program.**ATTR 673 Manual Therapy in Athletic Training****Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Manual therapy theory and techniques used as a therapeutic intervention for orthopedic injuries and conditions; indications and contradictions for the use of manual therapy; skill development in soft tissue assessment; application of manual and tool assisted techniques.

Prerequisite: Enrollment in MS athletic training program.

BAEN - Biological & Ag. Engr.

BAEN 601 Advanced Agricultural Systems Analysis**Credits 3. 3 Lecture Hours.**

Application of operations research tools and techniques to the analysis and management of technical systems in agriculture; optimization techniques applied to materials handling, supply chain logistics and other food and agricultural applications.

Prerequisite: Graduate classification.**BAEN 614 Renewable Energy Conversions****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Managing energy/power systems through engineering and technical aspects of quantifying and designing the suitability of several types of renewable energy resources; providing new insights of vast resources that future engineers can harness to augment diminishing supplies of non-renewable energy.

Prerequisites: BAEN 320 or approval of instructor.**BAEN 617 Fundamentals of Nanoscale Biological Engineering****Credits 3. 3 Lecture Hours.**

Nanostructures, nanofabrication methods, instrumentation and applications pertinent to Biological, Food and Bioenergy systems; provides opportunity to identify and utilize key tools available for fabricating, manipulating and analysis of nanostructures used in Biological Engineering applications.

Prerequisite: Graduate classification.**BAEN 620 Food Rheology****Credits 3. 3 Lecture Hours.**

Principles of elasticity, viscous flow and visco-elasticity applied to solid and liquid food materials; experimental determination of rheological properties using fundamental methods and empirical textural measurements; applications to food engineering research, textural measurement and quality control.

Prerequisites: AGSM 315/NFSC 315 or NFSC 315/AGSM 315; PHYS 201 or equivalent; graduate classification; or approval from instructor.**BAEN 622 Unit Operations in Food Processing****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Design of food process engineering systems; basic concepts of rheology and physical properties of foods; fundamentals of heat and mass transfer and process control.

Prerequisites: Fluid Mechanics, Thermodynamics, Fluid Dynamics.**BAEN 623/NFSC 623 Nanotechnology in Food Processing****Credits 3. 3 Lecture Hours.**

Fundamental and applied knowledge related to nanoscale systems and technologies utilized in processing of foods; includes nanoscale physico-chemical properties of foods, applications, manufacture and analysis of nanotechnologies for food processing and preservation; relevant industrial and regulatory food nanotechnology associated aspects.

Prerequisites: NFSC 312/DASC 312, NFSC 313/DASC 313, NFSC 315/AGSM 315, or AGSM 315/NFSC 315, or equivalent coursework, or approval of instructor.**Cross Listing:** NFSC 623/BAEN 623.

BAEN 625 Advances in Food Process Engineering**Credits 3. 3 Lecture Hours.**

Application of engineering fundamentals to the design of novel/advanced food processing systems including food irradiation, advances in thermal process, food freezing, food dehydration.

Prerequisite: Graduate classification.**BAEN 627 Engineering Aspects of Packaging****Credits 3. 3 Lecture Hours.**

Introduction to properties and engineering aspects of materials for use as components of a package and/or packaging system; principles of design and development of packages; evaluation of product-package-environment interaction mechanisms; testing methods; environmental concerns; regulations.

Prerequisite: Graduate classification.**BAEN 631 Bioprocesses and Separations in Biotechnology****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Application of engineering principles to recovery and purification of biological compounds derived from cell grown in bioreactors, transgenic animals, and plants. Process development, design, and scale up of downstream processes used in biotechnology and pharmaceutical industry. Emphasis on extraction, sedimentation, membrane filtration, precipitation, and liquid chromatography.

Prerequisites: Graduate classification or approval of instructor.**BAEN 642/CVEN 642 Water-Energy-Food Nexus: Toward Sustainable Resource Management****Credits 3. 3 Lecture Hours.**

Principles and application of the Water-Energy-Food nexus to state, national and international Water-Energy-Food securities and the interlinkages between them; exploration of quantitative framework to develop and assess sustainable tradeoffs of resources; hands on experiences; relevant real world projects or case studies.

Prerequisites: Strong analytical background; approval of instructor.**Cross Listing:** CVEN 642/BAEN 642.**BAEN 651 Geographic Information Systems for Resource Management****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Geographic Information System (GIS) approach to the integration of spatial and attribute data to study the capture, analysis, manipulation and portrayal of natural resource data; examination of data types/formats, as well as the integration of GIS with remote sensing and Global Positioning System; laboratory includes extensive use of GIS applications to conduct analyses of topics in natural resources.

Prerequisites: Graduate classification.**Cross Listing:** ESSM 651 and RENR 651.**BAEN 652 Advanced Topics in Geographic Information Systems****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Advanced GIS topics with a focus on modeling actual GIS applications including relational and database theory, design and implementation and its connection to GIS; surface analysis with digital terrain models; and an introduction to spatial statistics.

Prerequisite: BAEN 651.**BAEN 653 Bioreactor Design****Credits 3. 3 Lecture Hours.**

Kinetics of enzyme reactions and cell growth applied to bioreactor design, media formulation, cell culture conditions, oxygen transfer and sterilization.

Prerequisite: CHEN 651 or approval of instructor.**BAEN 655 Principles of Modern Optical Spectroscopy****Credits 3. 3 Lecture Hours.**

Optical spectroscopic techniques-their principles, based on the fundamentals of electromagnetism, interaction of light with matter and modern physics; Laser Induced Fluorescence; fluorescence correlation spectroscopy—single molecule spectroscopy; Raman spectroscopy ; optical coherence tomography; low coherence speckle interferometry; optical tweezers; imaging and microscopy beyond diffraction limit.

Prerequisites: Graduate classification.**BAEN 661 Experimental Methods in Biological and Agricultural Engineering****Credits 3. 3 Lecture Hours.**

Planning and carrying out empirical research with appropriate application of statistical methods for experimental design and analysis; experimental design, data analysis, hypothesis testing, and experimental errors.

Prerequisites: STAT 211, STAT 302, STAT 303, or STAT 651, or equivalent with approval of instructor.**BAEN 662 Statistical Methods in Biological and Agricultural Engineering****Credits 3. 3 Lecture Hours.**

Statistical methods applied to problems in biological and agricultural engineering; parameter estimation; probability distribution fitting; time-series analysis; random variable generation; uncertainty analysis.

Prerequisite: Graduate classification.**BAEN 665 Design of Biological Waste Treatment Systems****Credits 3. 3 Lecture Hours.**

Management and treatment of high organic content waste streams, with emphasis on agricultural; municipal, and agro-Industry wastewater; engineering design of biological waste treatment processes: resource recovery from waste streams: recycle and reuse of finished effluents.

Prerequisite: Graduate classification or approval of instructor.**BAEN 667 Entropy Theory and its Application in Water and Environmental Engineering****Credits 3. 3 Lecture Hours.**

Entropy theory, probability distributions, parameter estimation, hydrologic design, rainfall-runoff, infiltration and soil moisture, frequency analyses, sediment yield, velocity distributions, flow forecasting, hydraulic geometry, geomorphic structure, water distribution reliability and water availability assessment.

Prerequisites: Graduate classification; knowledge of calculus and statistics at the undergraduate level and approval of instructor.**BAEN 669 Water Quality Engineering****Credits 3. 3 Lecture Hours.**

Nonpoint source pollution processes including transport mechanisms and contaminant fate; design of best management practices for abating nonpoint source pollution.

Prerequisites: AGEN 350 or equivalent; SCSC 301; ENGR 214; graduate classification.**BAEN 670 Air Pollution Engineering****Credits 3. 3 Lecture Hours.**

Current topics in air pollution engineering including design and operation of air pollution abatement systems (cyclone, bag filters and scrubbers), emission factors, dispersion modeling, permitting, odor sensing and control, EPA/State Air Pollution Regulatory Agency (SAPRA), TSP, PM10, and PM2.5.

Prerequisites: BAEN 477 or MEEN 477, or approval of instructor.

BAEN 672 Small Watershed Hydrology**Credits 3. 3 Lecture Hours.**

Hydrology of small agricultural watersheds; precipitation frequency analysis; infiltration; runoff; erosion theory; sediment transport theory; evapotranspiration, and use of hydrological models.

Prerequisites: Graduate classification.**BAEN 673 Modeling Small Watersheds****Credits 3. 3 Lecture Hours.**

Transport of water and chemicals in small agricultural watersheds; simulation using hydrologic models coupled with geographical information systems (GIS); impact of land use on the quality of surface water and groundwater evaluated.

Prerequisites: Graduate classification.**BAEN 674 Vadose Zone Hydrology****Credits 3. 3 Lecture Hours.**

Fundamental concepts and advanced mathematical and experimental techniques for quantifying water, chemical, microorganism, and heat transport in the vadose zone (between soil surfaces and groundwater); provides a common platform for addressing issues related to soil and water resources, hydrology, geochemistry, microbiology, ecology, hydrogeology, and environmental engineering.

Prerequisite: Graduate classification.**BAEN 675 Hydrology Across Scale****Credits 3. 3 Lecture Hours.**

Advanced concepts of surface and subsurface hydrologic processes, measurements, and modeling techniques across different spatio-temporal scales; contemporary issues related to the soil and water resources, hydrogeology, geochemistry, microbiology, ecology, hydrology, and environmental engineering.

Prerequisite: Graduate classification in any engineering, agricultural science or geoscience program with environmental focus.**BAEN 681 Seminar****Credit 1. 1 Other Hour.**

Reviews, reports and discussion of ideas, recent advances and current topics.

BAEN 683 Peer-Review Process and Publication**Credit 1. 1 Lecture Hour.**

Techniques for communicating results of research that are defensible in a peer review process; student and advisor will select a research topic, identifying an appropriate target refereed journal; no thesis/dissertation preparation as a writing project accepted; critique other papers; prepare paper for review by instructor.

Prerequisite: Graduate classification in Biological and Agricultural Engineering only.**BAEN 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

An on-the-job supervised experience program, conducted on an individual basis in the area of the student's specialization in mechanized agriculture.

Prerequisite: Graduate classification or approval of instructor.**BAEN 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Advanced laboratory or field problems not related to student's thesis.

Prerequisite: Graduate classification.**BAEN 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of agricultural engineering. May be repeated for credit.

BAEN 690 Theory of Research**Credit 1. 1 Lecture Hour.**

Development of research inquiry and discussion of applicable experimental design, theoretical techniques and methodological principles of conducting original research; evaluation of current research of faculty and students and in engineering and scientific literature. Communication of research proposals and results. May be repeated for credit.

Prerequisites: Graduate classification.**BAEN 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

BICH - Biochemistry

BICH 601 Fundamentals of Biochemistry I**Credits 3. 3 Lecture Hours.**

Basic biochemical concepts pertaining to the structure of the major biomolecules (proteins, carbohydrates, lipids and nucleic acids); the relationship of structure to function of these molecules; structure and action of enzymes; principles of bioenergetics.

Prerequisite: One year of organic chemistry.**BICH 602 Fundamentals of Biochemistry II****Credits 3. 3 Lecture Hours.**

Major metabolic pathways for carbohydrates, lipids, amino acids, proteins and nucleic acids, emphasizing oxidative processes and the biosynthesis of RNA, DNA and protein; regulation of cellular metabolism.

Prerequisite: BICH 601.**BICH 603 Principles of Biochemistry & Biophysics****Credits 3. 3 Lecture Hours.**

Principles of Biochemistry & Biophysics. A modern quantitative, analytical and model-building-based approach to expand knowledge of the biochemical and biophysical properties of macromolecules found in living matter, including proteins, lipids, carbohydrates and nucleic acids.

Prerequisites: BICH 410 or BICH 601; CHEM 228 and CHEM 323; or approval of the instructor.**BICH 605 Methods of Biochemical Analysis****Credits 3. 3 Lecture Hours.**

Experimental techniques important in biochemistry including methodologies for data analysis.

Prerequisite: Graduate classification in biochemistry or approval of instructor.**BICH 608 Critical Analysis of the Biochemical Literature****Credits 2. 2 Lecture Hours.**

Reading and presentation of original articles in biochemistry and related fields to enhance understanding of experimental logic and scientific communication.

Prerequisite: Graduate classification in biochemistry or approval of instructor.**BICH 609 Preparation of a Biochemical Research Proposal****Credits 2. 2 Lecture Hours.**

Development and presentation of hypotheses, specific aims, significance and experimental approaches for a biochemical research proposal.

Prerequisite: Graduate classification in biochemistry.

BICH 624 Enzymes, Proteins and Nucleic Acids**Credits 3. 3 Lecture Hours.**

Chemical and physical properties of enzymes, proteins and nucleic acids; thermodynamics, kinetics and mechanisms of enzyme-catalyzed reactions and protein-nucleic acid interactions.

Prerequisites: BICH 603; CHEM 324.**BICH 625/MCMD 625 Nucleic Acid--Protein Interactions****Credit 1. 1 Lecture Hour.**

Mechanisms of nucleic acid-protein interactions involved in fundamental biochemical processes such as DNA replication and rearrangement, transposition, transcription, RNA splicing and translation; original research articles presented focusing on experimental approaches, interpretation of results and overall significance. Course may be taken 8 times for credit.

Prerequisites: BICH 431/GENE 431 or GENE 431/BICH 431 or equivalent; approval of instructor.**Cross Listing:** MCMD 625/BICH 625.**BICH 628/CSCE 628 Computational Biology****Credits 3. 3 Lecture Hours.**

Introduction to computational biology; formulations of biology problems as computational problems; computational approaches to solve problems in genomics and proteomics.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** CSCE 628/BICH 628.**BICH 631/GENE 631 Biochemical Genetics****Credits 3. 3 Lecture Hours.**

Genetic control of cellular metabolism; mechanism of gene action; gene-enzyme relationships; regulation of gene expression; structure and organization of genomes; biochemical manipulation and characterization of genetic molecules.

Prerequisites: BICH 431/GENE 431 or GENE 431/BICH 431; BICH 603.**Cross Listing:** GENE 631/BICH 631.**BICH 650/BIOL 650 Genomics****Credits 3. 3 Lecture Hours.**

Modern genomics as a tool for understanding biological systems; review of gene structure and organization and the history of sequencing technologies; focus on transcriptional, translational and functional genomics.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** BIOL 650/BICH 650.**BICH 654 Structural Biochemistry****Credits 3. 3 Lecture Hours.**

Basic physics of X-ray diffraction, crystal structure methods, introduction to structural data bases, molecular geometry and molecular modeling.

Prerequisite: Approval of instructor.**BICH 655 Crystallography Methods****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

The practice of x-ray diffraction in the study of biomolecules; solving protein crystal structures.

Prerequisite: Graduate classification.**BICH 656 RNA Biology****Credits 3. 3 Lecture Hours.**

Emphasis on newly discovered RNA-mediated processes and regulation; range of topics in modern RNA biology include RNA silencing; RNA-guided epigenetic regulation, CRISPR/Cas immunity and genome editing, telomerase biogenesis, riboswitches, exosome and editosome; application of RNA biology in medicine and biotechnology.

Prerequisites: BICH 301 and BICH 302.**BICH 657 Introduction to Structural Biology****Credit 1. 1 Lecture Hour.**

Protein expression, purification, characterization, crystallization and structural determination by X-ray crystallography; includes an eight hour workshop on crystallography.

Prerequisite: Graduate classification.**BICH 661 Advanced Genome Annotation with Ontologies****Credit 1. 2 Lab Hours.**

Advanced topics in functional annotation using ontologies; usage issues and quality control for ontologies and annotations; mentoring annotation activities from BICH 460 and evaluation of annotations. May be taken three times for credit.

Prerequisite: Graduate classification or approval of instructor.**BICH 662 Eukaryotic Transcription****Credit 1. 1 Lecture Hour.**

Intensive short course in molecular mechanisms of eukaryotic transcription, and its regulation.

Prerequisite: BICH 631/GENE 631 or GENE 631/BICH 631 or approval of instructor.**BICH 664 Fluorescence Spectroscopy****Credit 1. 1 Lecture Hour.**

Theory underlying fluorescence spectroscopy as well as practical considerations that must be understood when utilizing fluorescence as an analytical tool; the use of both steady-state and time-resolved fluorescence measurements to evaluate fluorescence quantum yield, quenching, anisotropy, and energy transfer.

Prerequisite: Graduate classification.**BICH 665 Biochemical Kinetics****Credit 1. 1 Lecture Hour.**

Theoretical principles and practical approaches to analysis of chemical kinetics with specific examples of applications to biochemistry and biochemical investigations.

Prerequisite: Graduate classification.**BICH 667 Molecular Probes****Credit 1. 1 Lecture Hour.**

Function of biomolecules in the context of living cells (in cellulo as opposed to in vitro); chemical tools and analytical techniques; application in the investigation of cellular processes; identification of biological problems and design.

Prerequisite: Graduate classification.**BICH 671/MCMD 671 Macromolecular Folding and Design****Credit 1. 1 Lecture Hour.**

Oral presentations and discussions in the general area of biomolecular structure, folding, function and design. May be taken 12 times.

Prerequisite: Approval of instructor.**Cross Listing:** MCMD 671/BICH 671.**BICH 672/MCMD 672 Biological Membranes****Credit 1. 1 Lecture Hour.**

Seminar-based course examining recent discoveries in the structure, function and assembly of biological membranes; oral presentation by students on current literature in molecular biology and biochemistry.

Prerequisite: Approval of instructor.**Cross Listing:** MCMD 672/BICH 672.

BICH 673/GENE 673 Gene Expression**Credit 1. 1 Lecture Hour.**

Oral presentations and discussions related to the biochemistry and molecular biology of gene expression in animal, plant and microbial systems. May be repeated for credit up to 12 times.

Prerequisite: Graduate classification in biochemistry or genetics or approval of instructor.

Cross Listing: GENE 673/BICH 673.

BICH 674/MCMD 674 Protein Folding and Stability**Credit 1. 1 Lecture Hour.**

Selected topics from recent literature in the general areas of protein folding, structure, and stability.

Prerequisite: Approval of instructor.

Cross Listing: MCMD 674/BICH 674.

BICH 675 Plant Biochemistry and Genomics**Credit 1. 1 Lecture Hour.**

Overview of current literature dealing with plant biochemistry/genomics; biochemistry topics will include the function of protein-protein interactions related to plant specific processes such as plant-pathogen interactions; genomics topics will focus on current analysis of plant genomes and how the derived information is being utilized to elucidate biochemical pathways.

Prerequisite: Graduate classification.

BICH 676 Bacteriophage Biology**Credit 1. 1 Lecture Hour.**

Oral presentation and discussion in the general area of the viruses of microbes and bacteria; literature review with a broad scope, from basic molecular biology of phages to practical applications of microbial virus technology. May be taken 12 times for credit.

Prerequisite: Approval of instructor.

BICH 677 Chemical Genetics and Drug Discovery**Credit 1. 1 Lecture Hour.**

Review, discuss and present scientific literature studies based on the usage of small molecules to alter protein function. May be repeated for credit.

Prerequisite: Graduate classification.

BICH 678 Metal Ions**Credit 1. 1 Lecture Hour.**

Understanding the roles of metals in biological systems and the methods used in biochemical and cell biological processes; reading primary research literature critically, critiquing research designs in terms of innovation, significance and logic, and uncovering both strengths and weaknesses of the discussed articles.

Prerequisites: CHEM 628 or approval of instructor.

BICH 679/MGMT 674 Building Scientific Relationships**Credit 1. 1 Lecture Hour.**

Addressing aspects of human element of scientific research; emotional and cultural intelligence, resiliency, team dynamics, leadership, effective communication with others, strategies for conflict resolution and best practices for mentoring undergraduates.

Prerequisites: Successful completion of one year of graduate study and affiliation with a research laboratory in the life sciences.

Cross Listing: MGMT 674/BICH 679.

BICH 681 Seminar**Credit 1. 1 Lecture Hour.**

Original articles in biochemistry and related fields designed to broaden understanding of problems in the field and to stimulate research.

BICH 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Biochemical laboratory procedures; preparations and instrumentation; problems assigned according to experience, interests and needs of individual student.

Prerequisite: Approval of instructor.

BICH 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of biochemistry. May be repeated for credit.

Prerequisite: Approval of instructor.

BICH 690 Theory of Biochemical Research**Credits 2. 2 Lecture Hours.**

State-of-the-art examination of modern trends in various subfields of modern biochemistry concentrating on the design of experiments, evaluation of research results and discussion of the current literature. May be repeated for credit.

BICH 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. Laboratory facilities available for original investigations in various phases of biochemistry.

Prerequisite: Approval of major advisor.

BICH 697 Methods in Teaching Biochemistry Laboratory**Credit 1. 1 Lecture Hour.**

Theory and practical aspects of teaching Biochemistry labs, with emphasis on content, grading, instructional methods and practical aspects of biochemistry labs. May be repeated for credit.

Prerequisite: Graduate classification in biochemistry.

BIED - Bilingual Education

BIED 610 Hispanic Bilingual Assessment and Monitoring Students**Credits 3. 3 Lecture Hours.**

Assessing language ability; language assessment; evaluating and scoring different types of assessments; guided field based experiences.

Prerequisites: Graduate classification; approval of department head.

BIED 611 Dual Language Program Methodologies**Credits 3. 3 Lecture Hours.**

Use of theory and effective teaching practice in promoting students' development of strong social and academic skills; relationship of culture to language; guided field experiences.

Prerequisites: Graduate classification; approval of department head.

BIED 612 Content Area Instruction for Hispanic Bilingual Programs**Credits 3. 3 Lecture Hours.**

Theories and approaches for integrating English as second language; learning strategies on how plan, procedures and units engage language teachers, students, and learning environment; guided field experiences.

Prerequisites: Graduate classification; approval of department head.

BIED 613 Spanish/English Bilingual**Credits 3. 3 Lecture Hours.**

Social-linguistic characteristics of second language learners acquiring literacy skills; reading and literature instruction for second language learners; reading and writing process across the curriculum for Hispanic second language learners; guided field experiences.

Prerequisites: Graduate classification; approval of department head.

BIED 614 Bilingual Education Curriculum Development**Credits 3. 3 Lecture Hours.**

Analysis of past and current trends in curriculum development in bilingual education; guided field experiences.

Prerequisites: Graduate classification; approval of department head.

BIED 615 Teacher Action Research in Bilingual Education**Credits 3. 3 Lecture Hours.**

Philosophy of teacher action research in bilingual education settings using qualitative methods with educational issues related to English language learners; provide guided practice in data collection, analysis, and presentation of action research.

BIED 616 Spanish for Bilingual and Dual Language Programs**Credits 3. 3 Lecture Hours.**

Understanding of dual language programs; literacy instruction through Spanish: socio-linguistic perspectives on literacy competence and effective instructional practices; guided field experiences.

Prerequisite: Graduate classification; approval of department head.

BIED 617 Evaluation of Programs with Bilingual and Language Minority Students K-12**Credits 3. 3 Lecture Hours.**

Evaluation and research models and methodologies in education of bilingual/language minority students from K-12.

Prerequisites: EPSY 610 or approval of instructor.

BIED 618 Early Language and Literacy**Credits 3. 3 Lecture Hours.**

Investigation of current language and literacy intervention research for young Hispanic/Latino children in preschool through second grade; emphasis on current intervention research targeting children at risk for reading difficulties in Spanish and/or English.

Prerequisites: Graduate classification; approval of department head.

BIED 619 Second Language Acquisition in Pre-K-12; Advanced Theory and Practice**Credits 3. 3 Lecture Hours.**

Examination of theory as a framework for explaining relationships, a research guide, and assumptions that inform practice; review how theory and practice for English only students have attempted to explain second language acquisition in second language learners.

Prerequisites: Graduate classification; approval of instructor; BIED 611; BIED 612.

BIED 620 Current Issues in Bilingual Education**Credits 3. 3 Lecture Hours.**

Survey of historical, political, language and sociocultural issues and their impact on the education of language minority groups.

Prerequisites: EPSY 611 and EPSY 612; graduate classification; approval of instructor and department head.

BIED 621 Methods for Bilingual Research**Credits 3. 3 Lecture Hours.**

Understanding educational research and research methodologies; use of research findings to appropriately inform school and classroom practices; overview of the research methodology to develop skills as future researchers and consumers of research; examination of qualitative and quantitative research methodologies and mixed methods in relation to their application to diverse populations.

Prerequisites: Graduate classification; approval of department head.

BIED 632 Research in Second Language Education**Credits 3. 3 Lecture Hours.**

Studies related to the teaching/learning process in two languages and field methods for carrying out those studies.

Prerequisites: EPSY 611; EPSY 612 or consent of instructor.

BIED 682 Seminar in...**Credit 1. 1 Other Hour.**

Knowledge, skills and attitudes in bilingual education. Specific topics are announced for each seminar offered. May be taken more than once but not to exceed 6 hours of credit.

Prerequisite: Approval of department head.

BIED 683 Field Practicum in...**Credits 1 to 15. 1 to 15 Other Hours.**

Supervised experience in professional employment settings in bilingual education with research related to current issues; requires a self-initiated proposal, a mid-semester formative report, and an end-of-semester summative report. Repeatable to 15 hours total.

Prerequisite: Approval of instructor and department head.

BIED 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Limited to advanced doctoral students; University directed experience in a professional employment setting; full-time participation and responsibility in experiences related to bilingual education. Repeatable to 9 hours total.

Prerequisites: Approval of department head six weeks prior to registration; approval of department head.

BIED 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems.

Prerequisite: Approval of department head.

BIED 689 Special Topics In...**Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of educational psychology. May be repeated for credit.

Prerequisite: Approval of department head.

BIED 690 Theory of Educational Psychology Research**Credits 3. 3 Lecture Hours.**

Theory and design of research problems and experiments in various subfields of educational psychology; communication of research proposals and results; evaluation of current research of faculty and students and review of current literature. May be repeated for credit.

Prerequisite: Approval of instructor and department head.

BIED 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of department head.

BIOL - Biology

BIOL 601/NRSC 635 Biological Clocks**Credits 3. 3 Lecture Hours.**

Introduction to the formal properties of biological rhythms; cellular and molecular bases for rhythmicity; temporal adaptations of organisms using clocks.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: NRSC 635/BIOL 601.

BIOL 602/MSEN 612 Fundamentals of Transmission Electron Microscopy
Credits 3. 2 Lecture Hours. 6 Lab Hours.

State-of-the-art fundamentals in transmission electron microscopy (TEM); theoretical background supporting a strong hands-on course component comprising specimen preparation and image acquisition/interpretation; practical experience to attain a proficiency level permitting independent operation of transmission electron microscopes in the Microscopy and Imaging Center.

Prerequisite: Students are required to write a half-page summary describing the specific problem they wish to resolve using transmission electron microscopy.

Cross Listing: MSEN 612/BIOL 602.

BIOL 603/MSEN 613 Advanced TEM Methodologies in Life and Material Sciences (TEM II)

Credits 3. 1 Lecture Hour. 6 Lab Hours.

Advanced TEM methodologies including specimen preparation and TEM imaging/analysis techniques as applicable to both biological and material samples; theory designed to support a strong hands-on component comprising specimen preparation, different imaging/diffraction/spectroscopic techniques and data interpretation.

Prerequisites: BIOL 602/MSEN 612; graduate classification.

Cross Listing: MSEN 613/BIOL 603.

BIOL 604/MSEN 614 Fundamentals of Scanning Electron Microscopy and Environmental Scanning Electron Microscopy

Credits 2. 1 Lecture Hour. 3 Lab Hours.

Fundamentals of Scanning Electron Microscopy (SEM) and Environmental Scanning Electron Microscopy (ESEM). Provides biologists, material scientists, and students from other disciplines with the techniques of operation of the scanning electron microscope (SEM) and the environmental SEM (ESEM) coupled with the appropriate theoretical background knowledge; individual instruction in support of their research endeavors involving SEM/ESEM.

Prerequisite: Graduate classification.

Cross Listing: MSEN 614/BIOL 604.

BIOL 606 Microbial Genetics

Credits 3. 3 Lecture Hours.

Basic understanding of microbial genetic systems and how genetic analyses can be used to investigate fundamental biological processes in bacteria.

Prerequisite: Approval of instructor.

BIOL 608 Theory and Applications of Light Microscopy

Credits 3. 2 Lecture Hours. 3 Lab Hours.

Provides biologists, material scientists and students from other disciplines with the theoretical background and practical techniques of sample preparation, operation of light microscopes as well as image acquisition and processing; individual instruction which facilitates the completion of their research projects involving light microscopic techniques.

Prerequisite: half-page write-up describing how their graduate work will benefit.

BIOL 609 Molecular Tools in Biology

Credits 3. 3 Lecture Hours.

Interactive lecture course in molecular biology for beginning graduate students; introduction to tools and methodologies used in prokaryotic and eukaryotic molecular labs; choosing the appropriate experimental technique for a given scientific question; virtual experiments will reinforce the applications and introduce useful bioinformatics tools.

Prerequisite: Graduate classification.

BIOL 610 Evolution

Credits 3. 3 Lecture Hours. 0 Lab Hours.

Fundamentals of evolutionary biology with an emphasis on evolutionary theory.

Prerequisite: Graduate classification or approval of instructor.

BIOL 611 Developmental Genetics

Credits 3. 3 Lecture Hours.

Major paradigms of eukaryotic gene regulation in terms of the role of gene expression during ontogeny and the effect of dysfunction in these processes on the neoplastic state.

BIOL 612 Fundamental Molecular Cell Biology

Credits 3. 3 Lecture Hours.

Foundation in current molecular and cellular biology and genetics; basis for many interdisciplinary studies including biostatistics, cancer biology, and biomedical materials and devices.

Prerequisites: Graduate classification; non-biology majors.

BIOL 613 Cell Biology

Credits 3. 3 Lecture Hours.

Consideration of the eukaryotic cell as a functional, integrated unit in living organisms including structure, composition, function and biogenesis of subcellular components; dynamic processes and interactions of cells, including division, communication, and death; experimental approaches in modern cell biology and selected applications of experimental cell biology to problems in medicine.

Prerequisite: BICH 410 or BIOL 213; concurrent enrollment in BIOL 213 or BICH 410 strongly discouraged.

BIOL 615/NRSC 636 Signaling in Behavior and Development

Credits 3. 3 Lecture Hours.

Will focus on signaling pathways used in multicellular animals. In each lecture, major signaling pathways used in behavior, physiology, and development will be introduced at the molecular level, and then be discussed in the context of organismal biology.

Prerequisite: Graduate classification.

Cross Listing: NRSC 636/BIOL 615.

BIOL 622 Microbial Physiology

Credits 3. 3 Lecture Hours.

An area of microbial physiology will be explored at the molecular, cellular, and genetic levels through reading and discussion of classic and current research literature. The area of focus may change from semester to semester. May be taken three times for credit with approval of instructor.

Prerequisite: Graduate classification.

BIOL 625 Structural and Molecular Biology

Credits 3. 3 Lecture Hours.

Successfully integrate structural knowledge into areas of interest; literature examples used to integrate structural information from large macromolecular complexes to single proteins with functional information obtained through other methods.

Prerequisite: Graduate classification or approval of instructor.

BIOL 627/NRSC 601 Principles of Neuroscience I

Credits 3. 3 Lecture Hours.

Detailed introduction to the basic fundamentals of cellular and molecular neuroscience; topics include membrane potentials, action potential generation, and the mechanisms underlying synaptic transmission, as well as their molecular basis.

Prerequisites: Graduate classification or approval of instructor.

Cross Listing: NRSC 601/BIOL 627.

BIOL 628/NRSC 602 Principles of Neuroscience II**Credits 3. 3 Lecture Hours.**

Fully integrated overview of nervous system organization and systems-level neurobiology; broad topics include sensory systems and sensory systems function, motor systems and neuromuscular function, central pattern generation and locomotion, homeostatic regulation, motivation, emotions, learning and memory, and circadian rhythms.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** NRSC 602/BIOL 628.**BIOL 634/NRSC 634 Comparative Neurobiology****Credits 3. 3 Lecture Hours.**

Cellular, molecular and systems neurobiology, together with neuroethology. A comparative approach to subject matter is stressed. Topics such as evolution of nervous systems and their diverse structure and complex functions are dealt with.

Cross Listing: NRSC 634/BIOL 634.**BIOL 635 Plant Molecular Biology****Credits 3. 3 Lecture Hours.**

Molecular aspects of plant growth, development, reproduction and evolution, emphasizing the structure, function, regulation, interaction and manipulation of plant genes; practical applications of plant molecular biology.

Prerequisite: GENE 431/BICH 431.**BIOL 644/NRSC 644 Neural Development****Credits 3. 3 Lecture Hours.**

Classical and current research literature to explore the major events in the development of a nervous system, including topics ranging from neurogenesis to synapse information.

Prerequisite: Graduate classification.**Cross Listing:** NRSC 644/BIOL 644.**BIOL 647 Digital Biology****Credits 4. 4 Lecture Hours.**

Obtain, organize, process, and analyze genome and genome-related data; learning to ask and answer biologically relevant questions by designing and performing experiments using computers.

Prerequisite: Graduate classification or approval from instructor.**BIOL 650/BICH 650 Genomics****Credits 3. 3 Lecture Hours.**

Modern genomics as a tool for understanding biological systems; review of gene structure and organization and the history of sequencing technologies; focus on transcriptional, translational and functional genomics.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** BICH 650/BIOL 650.**BIOL 651 Bioinformatics****Credits 3. 3 Lecture Hours.**

Introduction to applications related to information processing in biological research with practical training exercises; includes internet databases, sequence alignment, motif prediction, gene and promoter prediction, phylogenetic analysis, protein structure classification, analysis and prediction, genome annotation, assembly and comparative analysis, and proteomics analysis.

Prerequisite: Graduate classification or approval of instructor.**BIOL 652 Epigenetic Mechanisms****Credits 3. 3 Lecture Hours.**

Lectures and discussion of current research in epigenetic inheritance and its mechanisms in a variety of organisms. Structure of the course includes paper discussion and presentation, grant-writing, and grant-review.

Prerequisite: BICH 631/GENE 631.**BIOL 661 Antimicrobial Agents****Credit 1. 1 Lecture Hour.**

Understanding of microbial agents, limitations of use, biosynthesis and regulation, and challenges in development as new therapeutics.

Prerequisite: Approval of instructor.**BIOL 663 Biology of the Crustacea****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Classification, life history, morphology, physiology, ecology, diseases, parasites and predators of crustaceans; economic aspects of crustaceans; original literature emphasized.

Prerequisite: BIOL 335 or equivalent, or approval of instructor.**BIOL 665 Biology of Invertebrates****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Morphology, biology and phylogeny of invertebrates. Topics may be either detailed discussions of specific organisms or comparative information on a process.

Prerequisite: BIOL 335 or equivalent.**BIOL 680 Departmental Colloquium****Credit 1. 1 Lecture Hour.**

Attend presentations given by renowned scientists from various fields of biology; learn about new developments in science; stay abreast of current and trending research topics.

Prerequisite: Graduate classification in biology or microbiology.**BIOL 681 Seminar****Credit 1. 1 Lecture Hour.**

Detailed reports on specific topics in field chosen. Students may register in up to but no more than three sections of this course in the same semester.

BIOL 682 Research Seminar**Credit 1. 1 Other Hour.**

Seminars presented by students based upon their research projects.

Prerequisite: Graduate classification.**BIOL 683 Experimental Design in Biology****Credits 3. 3 Lecture Hours.**

Design of scientific research projects in the field of biology; a wide range of biological experiments designed with the appropriate statistical technique for analysis; design biological studies that are statistically tractable and perform basic statistical analyses using the statistical programming language R.

Prerequisites: Graduate classification and STAT651 or approval of instructor.**BIOL 685 Directed Studies****Credits 1 to 8. 1 to 8 Other Hours.**

Limited investigations in fields other than those chosen for thesis or dissertation.

BIOL 686 Biomedical Therapeutics Development**Credit 1. 1 Lecture Hour.**

Basic aspects of the biotechnology business; includes key aspects of biotechnology patents, the main steps in preclinical drug development and company structure and funding.

Prerequisites: Graduate classification or approval of instructor; BIOL 696 or concurrent enrollment.

BIOL 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of biology.

BIOL 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

BIOL 694 Graduate Orientation**Credit 1. 1 Lecture Hour.**

Instruction on what constitutes fraud in science, how to recognize it and avoid committing fraud; includes basis of ethics and plagiarism; negotiation techniques and conflict management; regulations and ethics covering animal and human experiments; record-keeping; data management; peer review. May be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Graduate classification.

BIOL 696 Ethics and Responsible Conduct of Research**Credit 1. 1 Lecture Hour.**

Instruction on what constitutes fraud in science, how to recognize it and avoid committing fraud; includes basis of ethics and plagiarism; negotiation techniques and conflict management; regulations and ethics covering animal and human experiments; record-keeping; data management; peer review. May be taken four times for credit.

Prerequisite: Graduate classification or approval of instructor.

BIOL 697 Methods in Teaching Biology Laboratory**Credit 1. 1 Lecture Hour.**

Introduction to teaching methods associated with the teaching of undergraduate biology laboratories; emphasis on effective preparation and delivery of laboratory course content, clear instructions for procedures and laboratory safety.

Prerequisite: Graduate classification in a biological science.

BIOL 698/NRSC 698 Behavior, Genes, and Evolution**Credits 3. 3 Lecture Hours.**

Introduces an integrative approach to the study of animal behavior, complementing evolutionary and ecological perspectives with molecular and genetic approaches and methodologies.

Prerequisite: Graduate classification.

Cross Listing: NRSC 698/BIOL 698.

BIOT - Biotechnology

BIOT 601 Biotechnology Principles and Techniques I**Credits 4. 0 Lecture Hours. 8 Lab Hours.**

Basic theories and techniques essential to laboratory research in agricultural, environmental or medical biotechnology such as laboratory safety and records keeping, genome informatics, DNA analysis, RNA analysis, protein analysis and analysis of biological systems.

Prerequisite: Graduate classification and approval of instructor.

BIOT 602 Biotechnology Principles and Techniques II**Credits 4. 0 Lecture Hours. 8 Lab Hours.**

Application of basic theories and principles of biotechnology to team and individual research problems in a laboratory setting.

Prerequisites: BIOT 601; graduate classification.

BIOT 603 Applied Principles of Biotechnology**Credits 4. 1 Lecture Hour. 9 Lab Hours.**

Applied experience with biotechnology laboratory procedures and instrumentation in a research environment. May be repeated twice for credit.

Prerequisites: BIOT 601; graduate classification.

BIOT 635 Molecular Biotechnology**Credits 3. 3 Lecture Hours.**

Theory and application of molecular biotechnology; consideration of the structure and function of cellular components and methods to characterize these components with reference to examples in industry.

Prerequisite: Approval of instructor.

BIOT 645 Biotechnology Writing**Credits 3. 3 Lecture Hours.**

Development of biotechnology writing and editorial skills; communication of specialized information to the public and peers.

Prerequisite: Graduate classification and approval of instructor.

BIOT 681 Biotechnology Seminar**Credit 1. 1 Other Hour.**

Review and discussion of current topics in biotechnology industries, with focus on skills essential to success in the corporate environment such as communication, interviewing and interpersonal skills.

Prerequisite: Graduate classification and approval of instructor.

BIOT 684 Directed Professional Internship**Credits 4. 4 Other Hours.**

A directed internship in an organization that provides on-the-job training with professionals in organizational settings appropriate to the student's professional objectives. May be taken two times for credit.

Prerequisite: Approval of the Chair of the Faculty of Biotechnology.

BIOT 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Provides customized training and experience to students in the Biotechnology Program; topics can include laboratory research, scientific literature reviews, biotechnology market surveys, and training in technology commercialization.

Prerequisite: Approval of instructor.

BIOT 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of biotechnology. May be repeated for credit.

Prerequisite: Approval of instructor.

BIMS - Biomedical Science

BIMS 602 Foundations in Biomedical Graduate Education and Research**Credits 2. 2 Lecture Hours.**

Principles and practices that are foundational for effective learning in graduate education to advance as a scholar, professional and researcher in the biomedical sciences.

Prerequisites: Graduate classification.

BMEN - Biomedical Engineering

BMEN 604 FDA Good Laboratory and Clinical Practices

Credits 3. 3 Lecture Hours.

Implementation of Good Laboratory Practices (GLP) for the submission of preclinical studies and use of Good Clinical Practices (GCP) in clinical trials in accordance with Food and Drug Administration (FDA) regulations; includes similarities and differences in GLP and GCP critical for the introduction of new drugs and medical devices.

Prerequisite: Graduate classification or approval of instructor.

BMEN 606 Medical Device Path to Market

Credits 3. 3 Lecture Hours.

Path to market for a medical device with specific attention to the regulatory affairs to enable the development of an appropriate regulatory strategy due to the highly regulated global environment.

Prerequisite: Graduate classification or approval of instructor.

BMEN 608 Biophotonics II

Credits 3. 3 Lecture Hours.

Photon transport in tissue; photon scattering and absorption; Mie scattering; Monte Carlo; optical spectroscopy, including absorption, fluorescence, and Raman scattering; multiphoton processes; plasmonics.

Prerequisite: BMEN 625 or approval of instructor.

BMEN 613 Principles and Analysis of Physiological Control Systems

Credits 3. 3 Lecture Hours.

Techniques for generating quantitative mathematical models of physiological control systems and devices; the behavior of physiological control systems using both time and frequency domain methods.

Prerequisites: Graduate classification or approval of instructor.

BMEN 622 Bioelectromagnetism

Credits 3. 3 Lecture Hours.

Electric, magnetic and electromagnetic phenomena in association with biological tissues; source modeling based on physiological current including line and volume conductor models as well as electromagnetic-based stimulation, sensing and imaging.

Prerequisite: Graduate classification or approval of instructor.

BMEN 625 Biophotonics

Credits 3. 3 Lecture Hours.

Theory and application of optical instrumentation, including light sources, lasers, detectors, and optical fibers; instrumentation and engineering in biomedical applications of optics in therapeutics, diagnostics, and biosensing.

Prerequisite: Graduate classification or approval of instructor.

BMEN 627/ECEN 763 Magnetic Resonance Engineering

Credits 3. 2 Lecture Hours. 3 Lab Hours.

Design, construction and application of instrumentation for MR imaging; fundamentals of the architecture of an MR spectrometer and the gradient subsystem used for image localization; emphasis on the radiofrequency sensors and systems used for signal generation and reception.

Prerequisites: BMEN major; graduate classification or approval of instructor.

Cross Listing: ECEN 763/BMEN 627.

BMEN 628 Embedded Systems for Medical Applications

Credits 3. 2 Lecture Hours. 3 Lab Hours.

Principles of embedded system architecture and programming; fundamentals and theoretical foundations of wireless communication systems; hands-on experiences of how an embedded system could be used to solve problems in biomedical engineering; projects on wireless sensors and imaging for medical devices.

Prerequisite: Graduate classification or approval of instructor.

BMEN 631 Biomolecular Engineering

Credits 3. 3 Lecture Hours.

Foundations for understanding the experimental approaches for measuring and manipulating biomolecules; proteins, nucleic acids, and carbohydrates; thermodynamics and kinetics of biomolecular reactions.

Prerequisite: Graduate classification or approval of instructor.

BMEN 632 Molecular and Cellular Biomechanics

Credits 3. 3 Lecture Hours.

Introduces biomolecules and their assemblies that play structural and dynamical roles in subcellular to cellular level mechanics, with emphasis on quantitative/theoretical descriptions, and discussions of the relevant experiment approaches to probe these nano to micro-scale phenomena; including topics in (1) self-assembly of cytoskeleton and biomembranes, (2) molecular motors, (3) cell motility, and mechanotransduction.

Prerequisites: Graduate classification or approval of instructor.

BMEN 635 Biomaterials Compatibility

Credits 3. 3 Lecture Hours.

Relevance of mechanical and physical properties to implant selection and design; effect of the body environment on metallic, ceramic and plastic materials; tissue engineering; rejection mechanisms used by the body to maintain homeostasis regulatory requirements.

Prerequisites: Approval of instructor.

BMEN 636 Pathophysiology of Systemic Diseases Augmented with Implantable Devices

Credits 3. 3 Lecture Hours.

Clinical presentation of patients with systemic diseases and the pathophysiologic interrelationship with therapeutic implantable devices; processes of inflammation/repair as it applies to challenges of therapeutic augmentation with implantable devices; systems covered include cardiovascular, central nervous system, eye, dental, gastrointestinal, musculoskeletal, endocrine, reproductive/urogenital, skin/soft tissue; implantable device intervention as a therapeutic adjunct in systemic diseases.

Prerequisites: Graduate classification or approval of instructor.

BMEN 637 Pathological Basis of Implantable Devices

Credits 3. 3 Lecture Hours.

Understanding the relationship that clinical presentation has for patients with primary heart disease; inflammation and repair, systematic pathology emphasis on cardiovascular disease, and the implantable device intervention as a therapeutic adjunct in the heart.

Prerequisite: Graduate classification or approval of instructor.

BMEN 641 Numerical Methods in Biomedical Engineering

Credits 3. 3 Lecture Hours.

Application of numerical analysis to analyze molecular, cellular and physiological systems; general techniques used to analyze steady and dynamic systems; techniques will be applied in a MATLAB programming environment.

Prerequisite: Graduate classification or approval of instructor.

BMEN 642 Mass and Energy Transfer in Biosystems

Credits 3. 3 Lecture Hours.

Understanding the transport phenomena associated with physiological systems and their interaction with medical devices; exchange processes in artificial life support systems and diagnostic equipment.

Prerequisite: Graduate classification or approval of instructor.

BMEN 643 Risk Based Development and Testing of Medical Devices
Credits 3. 3 Lecture Hours.

Focus on the detailed design and development phases of the design innovation process for healthcare applications; includes medical device development projects in which teams will work on innovative medical devices that progressed through the concept phase of the development life cycle; includes detailed design and development, risk based design process, including the conduct of hazards analysis, design FMEA, application FMEA, process FMEA, device manufacturing, device testing and FDA design verification and validation.

Prerequisites: Enrolled in master of engineering in biomedical engineering; graduate classification or approval of instructor.

BMEN 650 Biomedical Optics Laboratory

Credits 3. 2 Lecture Hours. 3 Lab Hours.

Biomedical optics technology; basic engineering principles used in developing therapeutic and diagnostic devices; a series of hands-on labs will be performed including optical monitoring, diagnostic and therapeutic experiments.

Prerequisite: Graduate classification or approval of instructor.

BMEN 651 Cell Mechanobiology

Credits 3. 3 Lecture Hours.

Focuses on how mechanical forces influence cell behavior through physical and biochemical mechanisms; objectives include integrating engineering and cell biology to solve biomedical problems, which includes developing models for applying forces to cultured cells and tissues and measuring changes in cell biochemistry, structure, and function.

Prerequisite: Graduate classification or approval of instructor.

BMEN 657 Orthopedic Biomechanics

Credits 3. 3 Lecture Hours.

Fundamental course in orthopedic biomechanics designed to develop competencies in biomechanical principles using practical examples and clinical case studies of how biomechanical knowledge is applied to the evaluation of musculoskeletal tissues and structures, and treatment options for musculoskeletal dysfunction.

Prerequisite(s): Admitted into the major degree sequence in Biomedical Engineering and graduate classification.

BMEN 658 Motion Biomechanics

Credits 3. 3 Lecture Hours.

Skeletal anatomy and mechanics; muscle anatomy and mechanics; theory and application of electromyography; motion and force measuring equipment and techniques; inverse dynamics modeling of the human body; current topics in musculoskeletal biomechanics research.

Prerequisites: Graduate classification or approval of instructor.

BMEN 661 Cardiac Mechanics

Credits 3. 3 Lecture Hours.

Application of continuum mechanics and computational solid mechanics to the study of the mammalian heart; utilization of continuum mechanics and finite element analysis in solving non-linear boundary value problems in biomechanics.

Prerequisite: Graduate classification or approval of instructor.

BMEN 663 Soft Tissue Mechanics and Finite Element Methods

Credits 3. 3 Lecture Hours.

Application of continuum mechanics and finite element methods to the study of the mechanical behavior of soft tissues and associative applications in biomedicine.

Prerequisite: Graduate classification or approval of instructor.

BMEN 669 Entrepreneurial Pathways in Medical Devices

Credits 3. 3 Lecture Hours.

Overview of fundamental elements and development steps for an effective strategy pathway including regulatory pathway for commercialization of medical product/medical device innovations; application of the basic regulations and associated requirements and enforcements for product market approval; exploration of product quality test method design requirements; understanding of the applicable regulations and standards pertaining to the design, testing, approval and marketing of medical devices.

Prerequisite: Graduate classification or approval of instructor.

BMEN 674 Communications in Biomedical Engineering

Credits 3. 3 Lecture Hours.

General concepts for communicating the results of biomedical research including written papers, conference proceedings, proposals and grants, as well as oral presentations and basic ethics.

Prerequisite: Approval of instructor.

BMEN 675 Biomedical Case Studies

Credit 1. 1 Lecture Hour.

Introduction to the engineering design process for solving biomedical problems by using the case study method in biomedical instrument design.

Prerequisite: Approval of instructor.

BMEN 676 Professional Development for Biomedical Engineering

Credits 3. 3 Lecture Hours.

Advanced concepts in professional interactions including oral and written communications; skills related to interviewing and obtaining job offers and understanding employment compensation and benefits; professional ethics.

Prerequisite: Graduate classification or approval of instructor.

BMEN 680 Biomedical Engineering of Tissues

Credits 3. 3 Lecture Hours.

Introduction to engineering strategies used to repair tissue; literature-grounded overview of current strategies using stem cells, 3D scaffolds and drug/gene delivery including ethical considerations of these therapies.

Prerequisite: Graduate classification or approval of instructor.

BMEN 681 Seminar

Credit 1. 1 Lecture Hour.

Designed to permit student to broaden capability, performance and perspective in biomedical engineering via his or her own formal presentation and by presentations from other professionals.

Prerequisite: Approval of instructor.

BMEN 682 Polymeric Biomaterials

Credits 3. 3 Lecture Hours.

Preparation, properties, and biomedical applications of polymers including polymerization; structure-property relationships; molecular weight and measurement; morphology; thermal transitions; network formation; mechanical behavior; polymeric surface modification; polymer biocompatibility and bioadhesion; polymers in medicine, dentistry, and surgery; polymers for drug delivery; polymeric hydrogels; and biodegradable polymers.

Prerequisites: Graduate classification or approval of instructor.

BMEN 683 Polymeric Biomaterial Synthesis**Credits 3. 3 Lecture Hours.**

Overview of polymer synthetic routes and key structure-property relationships with emphasis on the design of polymeric systems to achieve specific properties; tissue engineering and drug delivery applications will be used as model systems to explore the process of biomaterial design from synthesis to device evaluation.

Prerequisite: Graduate classification or approval of instructor.

BMEN 684 Professional Internship**Credits 1 to 12. 1 to 12 Other Hours.**

Training under the supervision of practicing engineers in settings appropriate to the student's professional objectives.

Prerequisites: Approval of chair of student's advisory committee and department head.

BMEN 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Allows students the opportunity to undertake and complete, for credit, limited investigations not included within thesis or dissertation research and not covered by other courses. May be repeated for credit.

Prerequisites: Approval of designated instructor and approved project proposal.

BMEN 686 Biomedical Nanotechnology**Credits 3. 3 Lecture Hours.**

Introduction to nanotechnology applications in biomedicine; concepts of scale; unique properties at the nanoscale; biological interaction, transport, and biocompatibility of nanomaterials; current research and development of nanotechnology for medical applications, including sensors, diagnostic tools, drug delivery systems, therapeutic devices, and interactions of cells and biomolecules with nanostructured surfaces.

Prerequisite: Graduate classification or approval of instructor.

BMEN 687 Drug Delivery**Credits 3. 3 Lecture Hours.**

Mechanisms for controlled release of pharmaceutically active agents and the development of useful drug delivery systems; controlled release mechanisms including diffusive, convective and erosive driving forces by using case studies related to oral, topical and parenteral release in a frontier interdisciplinary scientific research format.

Prerequisite: Graduate classification in biomedical engineering or approval of instructor.

BMEN 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of biomedical engineering. May be repeated for credit.

Prerequisite: Approval of instructor.

BMEN 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

BUAD - Business Administration

BUAD 620 Business Communication**Credits 1 to 3. 1 to 3 Lecture Hours.**

Effective oral and written communication for corporate settings; communication theory and practice with core MBA and other courses; practice with oral presentation skills in corporate situations. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.

BUAD 679 Leadership Development**Credits 1 to 4. 1 to 4 Lecture Hours.**

Focus on assignments and activities to develop self-awareness as a leader and encourage reflection; strategies to improve leadership and communication with emphasis on leading, influencing and team work in a business context; integration of core business knowledge and skills. May be repeated for credit.

Prerequisite: Enrollment limited to BUAD Classification 7 MBA students.

BUAD 681 Seminar**Credit 1. 1 Lecture Hour.**

One credit hour seminar focusing upon a variety of skills essential in a management career including communications, business and government relations and interpersonal skills. An Executive Lecture Series may form a component of this course. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment is limited to BUAD classification 7 and 8 graduate students.

BUAD 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

A directed internship in an organization to provide students with on-the-job training with professionals in organizational settings appropriate to the student's professional objectives. Classification 6 students may not enroll in this course.

Prerequisite: Approval of committee chair and department head.

BUAD 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed study of selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor and department head.

BUAD 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of business administration.

Prerequisite: Approval of instructor.

BUAD 693 Professional Study**Credits 1 to 6. 1 to 6 Lecture Hours.**

Approved professional study project as part of the Mays MBA Program. Enrollment limited to Business Administration G7 students.

BUAD 700 Value Creation**Credits 1 to 4. 1 to 4 Lecture Hours.**

Value creation process in business sectors; relationships among the partners in the value chain; theory and frameworks underlying successful business strategies.

Prerequisite: For Master of Science in Business students only.

BUAD 701 Business Collaboration**Credits 1 to 4. 1 to 4 Lecture Hours.**

Project management collaboration tools and practices; business communication tools and practices; other commonly used business software and applications.

Prerequisite: For Master of Science in Business students only.

BUAD 702 Career Management**Credits 1 to 4. 1 to 4 Lecture Hours.**

Career management tools, self-assessment, goal development, career planning development and skill building for ongoing career management.

Prerequisite: For Master of Science in Business students only.

BUAD 705 Business Communications and Professional Presence
Credits 1 to 4. 1 to 4 Lecture Hours.

Communication theory; written and oral communication skills practice; professional presence; corporation communication; and professional development. May be taken four times for credit.

Prerequisite: For Master of Science in Business students only.

BUAD 710 Ethical Decision Making and Conduct

Credits 1 to 4. 1 to 4 Lecture Hours.

Role of ethical reasoning, objectivity, independence and other core values to the development of a leader; critical analysis of ethical dilemmas; assimilation of ethical thinking and behavior into personal and professional life.

Prerequisite: For Master of Science in Business students only.

BUAD 715 International Business Environment

Credits 1 to 4. 1 to 4 Lecture Hours.

Issues, problems, challenges and opportunities facing organizations competing in a global economy; environment of international business; international finance and accounting; international strategies; forms of organization design used by multinational firms; human resources in an international context; cultural and control issues facing the international leader.

Prerequisite: For Master of Science in Business students only.

BUAD 720 Integrated Business Experience

Credits 1 to 4. 1 to 4 Lecture Hours.

Practical application of value creation process; business model development; financial projections; market validation; evaluation of business opportunities and entrepreneurial ventures.

Prerequisite: For Master of Science in Business students only.

BUSH - Geo. Bush School of Gov

BUSH 600 Bush School Graduate Study Abroad

Credits 1 to 12. 1 to 12 Other Hours.

For students in approved study abroad and reciprocal educational exchange programs.

Prerequisites: Graduate classification in the Bush School; approval of director.

BUSH 601 Leadership and Public Administration

Credits 3. 3 Lecture Hours.

Overview of the field of public administration; theory and practice of leadership.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

BUSH 602 Writing for the Medal of Excellence

Credits 0. 0 Lecture Hours.

No Credit. Preparation of the ePortfolio, requirement for the Medal of Excellence; guided reflection on learning across interdisciplinary experiences such as participation in the Leadership Program, capstone courses, internships and other high-impact experiences and on writing clear, coherent, well-developed reflective essays.

Prerequisite: Admission into Master of International Affairs or Master of Public Service and Administration.

BUSH 631 Quantitative Methods in Public Management I

Credits 3. 3 Lecture Hours.

Introduction to the common methods for social and policy analysis with a focus on application of methods such as analysis of variance and regression, to tasks including policy analysis, evaluation and survey research; emphasis on the performance of social and policy analysis, although some statistical theory is introduced.

Prerequisites: Graduate classification and approval of MPSA or MPIA director; STAT 303 or equivalent.

BUSH 632 Quantitative Methods in Public Management II

Credits 3. 3 Lecture Hours.

Numerous formal aspects and methods of decision-making useful in public management including benefit-cost analysis, program evaluation and survey sampling; emphasis on theoretical foundation and practical application; collection and analysis of information, formulation of results and presentation of conclusions.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

BUSH 635 Quantitative Methods in Public Management II: Policy Analysis Emphasis

Credits 3. 3 Lecture Hours.

Continuation of BUSH 631. Advanced instruction in making useful policy recommendations based on regression analysis, survey design, data analysis, and techniques for interpreting statistical output from multiple disciplines; application of analysis software.

Prerequisites: BUSH 631; approval of MPSA or MPIA Director.

BUSH 636 Quantitative Methods II: Game Theory Emphasis

Credits 3. 3 Lecture Hours.

Continuation of BUSH 631; advanced instruction in quantitative social science research methods; designed to help understand influences and constraints on decision-makers, improve the ability to characterize and predict decisions and assess the validity of information presented, and analyze situations of relevance to making decisions as a public manager.

Prerequisites: BUSH 631; PSAA or INTA majors only.

BUSH 668

Credits 3. 3 Lecture Hours.

BUSH 685 Directed Studies

Credits 1 to 4. 1 to 4 Other Hours.

Directed individual instruction in selected problems in government and public service.

Prerequisites: Graduate classification and approval of program director.

BUSH 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research for thesis or dissertation.

CARC - College of Architecture

CARC 600 College of Architecture Graduate Study Abroad

Credits 1 to 16. 1 to 16 Other Hours.

For students in approved study abroad programs participating in reciprocal educational exchange programs.

Prerequisite: Admission to approved program.

CARC 601 Foundations of Research in Planning and Design**Credits 3. 3 Lecture Hours.**

Introduction to the research process and its application to problems in planning and design; presentation of philosophy and logic underlying the scientific method; critical analysis of planning and design literature according to each step of the research process: problem definition, hypothesis development, study design, analysis and interpretation of the findings.

CARC 602 Research Methods in Planning and Design**Credits 3. 3 Lecture Hours.**

Basic empirical research methods used in planning and design research including experimental, survey and case study designs; comparisons of the various methods; application of techniques in sample selection, data collection and analytic approaches. May be repeated for credit.

Prerequisite: STAT 651 or equivalent.**CARC 604 Advanced Field Studies in Design Innovation****Credits 1 to 18. 1 to 18 Other Hours.**

Advanced design innovation in international and domestic environments away from Texas A&M University campus; emphasis on the cultural, social economic, geographical, climatic and technological factors influencing design solutions for human needs.

Prerequisite: Graduate classification.**CARC 685 Directed Studies****Credits 1 to 6. 1-1 Other Hours.**

Individual problems involving application of theory and practice in architecture, construction science, landscape architecture and urban and regional planning in an international setting.

Prerequisites: Approval of instructor and department head.**CARC 689 Special Topics in...****Credits 1 to 6. 1 to 6 Lecture Hours.**

Selected topics in an identified field. May be repeated for credit.

CARC 698 Writing for Publication**Credits 3. 3 Lecture Hours.**

Writing in academic disciplines and settings. Writing for different audiences and purposes. Style; planning and development of academic journal articles; grant proposals; correspondence; oral presentations; technical reports. Permission of departmental/college graduate advisor. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Advanced standing in master's doctoral programs.

CEHD - Coll. of Ed & Human Dev

CEHD 600 Education and Human Development Study Abroad**Credits 1 to 18. 1 to 18 Lecture Hours.**

For students in approved programs to study abroad. May be repeated for credit.

Prerequisite: Approval of department head.**CEHD 603 Writing for Publication in Education and Human Development Research****Credits 3. 3 Lecture Hours.**

Assists students with writing and submitting research findings for publication, and managing contingencies for becoming productive scholars in their field.

Prerequisite: Graduate classification.**CEHD 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of education and human development. May be repeated for credit.

Prerequisites: Graduate classification and approval of instructor.

CHEM - Chemistry

CHEM 601 Analytical Chemistry I**Credits 3. 3 Lecture Hours.**

Fundamentals of chemical instrumentation. Modular approach to instrumental methods of chemical analysis; modules to be covered include digital electronics, modern optics, basic quantification and signal-to-noise enhancements.

Prerequisite: Graduate classification in chemistry or approval of instructor.**CHEM 602 Analytical Chemistry II****Credits 3. 3 Lecture Hours.**

Modern analytical techniques, spectroscopies, chromatography, and "hyphenated" methods such as GC-FTIR, GC-MS, HPLC-MS, CE-LIF, and CE-MS are examined from the perspective of surface analysis, fundamentals of separation science and structural characterization of complex molecular systems.

Prerequisite: CHEM 601.**CHEM 603 Modern Chromatographic Separation Methods****Credits 3. 3 Lecture Hours.**

Intended for graduate students in chemistry, chemical engineering, and the life sciences.

Prerequisite: Graduate standing.**CHEM 610 Organic Reactions****Credits 3. 3 Lecture Hours.**

Introduction to mechanisms and scope of the basic organic reaction types as applied to major functional groups.

Prerequisite: CHEM 646 or approval of instructor.**CHEM 615 Organic Synthesis****Credits 3. 3 Lecture Hours.**

Application of organic reactions to synthesis of complex organic molecules. Synthesis design and methodology, scope and limitations of reactions and experimental design.

Prerequisite: CHEM 610.**CHEM 616 Organometallic Transformations for Organic Synthesis****Credits 3. 3 Lecture Hours.**

Introduction to transition and main group metal-mediated reactions in organic synthesis; organometallic mechanisms in the context of homogeneous catalytic systems currently employed in synthetic laboratories; emphasis on the properties of transition metal complexes and their interactions with organic substrates that promote useful chemical transformations.

Prerequisite: CHEM 646 recommended.**CHEM 618 NMR Spectroscopy****Credits 3. 3 Lecture Hours.**

Theory and practice of modern nuclear magnetic resonance spectroscopy; Bloch equations, relaxation and relaxation mechanisms, chemical exchange, pulse and Fourier-transform methods, selective excitation, 2-D methods and solid-state nuclear magnetic resonance.

Prerequisite: Graduate classification in chemistry or approval of instructor.

CHEM 619 Analytical Spectroscopy**Credits 3. 3 Lecture Hours.**

Fundamentals of optical spectroscopy and applications; quantum mechanical description of light-matter interaction, linear and nonlinear spectroscopy, optics and spectroscopic instrumentation, optical signal detection and data acquisition/ processing, applications of spectroscopic techniques in nanoscience.

Prerequisite: CHEM 648 or approval of instructor.**CHEM 621 Chemical Kinetics****Credits 3. 3 Lecture Hours.**

Present theories about chemical reaction rates and mechanisms.

Prerequisite: CHEM 328 or approval of instructor.**CHEM 623 Surface Chemistry****Credits 3. 3 Lecture Hours.**

Nature, structure and chemistry of surfaces; characterization of surfaces from surface energy to structure; relation to chemical processes.

Prerequisite: Graduate classification in chemistry or approval of instructor.**CHEM 627 Principles of Biological Chemistry****Credits 3. 3 Lecture Hours.**

General principles of biological chemistry with an emphasis on the structures and mechanisms of action for proteins, nucleic acids and lipids.

Prerequisite: Graduate classification.**CHEM 628 Coordination and Bioinorganic Chemistry****Credits 3. 3 Lecture Hours.**

Structure and reactivity of coordination compounds; reactions of metal ions with small biomolecules and the reactions of toxic metal ions; role of metal ions in biological systems including the function of metal ions in enzymes.

Prerequisite: CHEM 633.**CHEM 629 Main Group Chemistry****Credits 3. 3 Lecture Hours.**

Chemistry of the ns and np elements of the periodic table and the noble gases including the organometallic chemistry of these elements.

Prerequisite: CHEM 633.**CHEM 630 Bioorganic Chemistry****Credits 3. 3 Lecture Hours.**

Bioorganic Chemistry. Introduction to current research areas of bioorganic chemistry and chemical genetic tools in exploring biological systems; DNA recombinant technology; histone chemical biology; protein glycosylation; protein engineering methods; gene transcription regulation; semi-synthesis of proteins with PTM analogs.

Prerequisites: CHEM 627 or approval of instructor.**CHEM 631 Statistical Thermodynamics****Credits 3. 3 Lecture Hours.**

Methods of statistical mechanics based primarily on Boltzmann statistics; approach to thermodynamics through partition function; statistical concept of entropy.

CHEM 633 Principles of Inorganic Chemistry**Credits 3. 3 Lecture Hours.**

General principles of inorganic chemistry treated with a view to applications in other subfields of chemistry.

Prerequisite: Graduate classification in chemistry or approval of instructor.**CHEM 634 Physical Methods in Inorganic Chemistry****Credits 3. 3 Lecture Hours.**

Determination of the molecular structure of inorganic and organometallic species; modern aspects of diffraction, magnetic resonance and vibrational methods.

Prerequisite: CHEM 641 or CHEM 673.**CHEM 635 Introduction to X-ray Diffraction Methods****Credits 3. 3 Lecture Hours.**

Fundamentals of diffraction theory by crystals and the solution of crystal structures using this methodology.

Prerequisite: BS in Chemistry, Physics, or Engineering.**CHEM 636 Mechanistic Inorganic Chemistry****Credits 2. 2 Lecture Hours.**

Reaction pathways in both main group and transition-metal complexes; factors which influence the reaction rate including nature of the metal, the coordination sphere, reaction conditions and catalytic intermediates.

Prerequisite: CHEM 633.**CHEM 640 Laboratory Methods in Biological Chemistry****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Application of chemical techniques to the investigation and/or manipulation of biological systems; laboratory methods provides a hands-on opportunity to gain an understanding and appreciation for chemical biology techniques.

Prerequisite: Graduate classification or approval of instructor.**CHEM 641 Structural Inorganic Chemistry****Credits 3. 3 Lecture Hours.**

Introduction to chemical bonding; ionic, covalent, coordinate and hydrogen bonding; relationship of molecular orbital and ligand field theories to experimental studies of the electronic structure of inorganic molecules.

Prerequisites: CHEM 633 and CHEM 673.**CHEM 642 Organometallic Chemistry and Homogeneous Catalysis****Credits 3. 3 Lecture Hours.**

Synthesis, structure and reactivity of organometallic compounds; elementary processes for general and radical reactions, mechanism of reactions at metal centers and applications to homogeneous catalysis.

Prerequisite: CHEM 633.**CHEM 644 Natural Products Biosynthesis****Credits 3. 3 Lecture Hours.**

Survey of the chemical reactions occurring in living systems, describe the experimental methods used to study these reactions and examine the biosynthesis of the major families of natural products; emphasis on the mechanistic chemistry of the biosynthetic pathway.

Prerequisite: Graduate classification or approval of instructor.**CHEM 646 Physical Organic Chemistry****Credits 3. 3 Lecture Hours.**

A detailed introduction to the theory and principles of organic chemistry; bonding and structure in organic chemistry, stereochemistry, reactive intermediates in organic chemistry and transition state theory; kinetics and thermodynamic approaches.

Prerequisite: CHEM 228 or approval of instructor.**CHEM 647 Spectra of Organic Compounds****Credits 3. 3 Lecture Hours.**

Correlations of molecular structure with spectroscopic and other physical properties; applications to modern problems in organic chemistry.

Prerequisite: CHEM 646 or approval of instructor.

CHEM 648 Principles of Quantum Mechanics**Credits 3. 3 Lecture Hours.**

Classical mechanics and development of wave mechanics; application of wave mechanics to special chemical problems.

Prerequisite: Approval of instructor.**CHEM 658 Molecular Modeling****Credits 2. 1 Lecture Hour. 3 Lab Hours.**

An introduction to molecular modeling with an emphasis on quantum level calculations. Lectures will cover the basic theory behind the calculations and lab work will focus on the practical application of modern computational chemistry codes.

Prerequisite: Graduate classification or approval of instructor.**CHEM 660 Nuclear Chemistry****Credits 3. 3 Lecture Hours. 0 Lab Hours.**

Radioactive decay, nuclear models, nuclear spectroscopy, nuclear reactions, fission and other topics of current interest in nuclear chemical research.

Prerequisite: CHEM 464 or approval of instructor.**CHEM 661 Radiochemistry****Credits 3. 3 Lecture Hours.**

Fundamentals of radiochemistry, survey of the chemistry of radioelements, radiochemistry of the nuclear fuel cycle, environmental radiochemistry, and other topics of interest in current radiochemical research.

Prerequisite: CHEM 464, NUEN 302, or approval of instructor.**CHEM 670 Physical Methods in Biological Chemistry****Credits 3. 3 Lecture Hours.**

Overview of current methods for the characterization of biological macromolecules, including protein structure, protein-ligand interactions, protein folding; techniques discussed include nuclear magnetic resonance, optical spectroscopy, calorimetry, electron paramagnetic resonance, Mössbauer spectroscopy, X-ray crystallography, electron microscopy, and mass spectrometry.

Prerequisite: Graduate classification or approval of instructor.**CHEM 672 Bioorganic Reaction Mechanisms****Credits 3. 3 Lecture Hours.**

Proposed mechanisms of action of various enzymes and coenzymes from the "model systems" approach; new developments, theory and established mechanisms.

Prerequisites: CHEM 646; BICH 624.**CHEM 673 Symmetry and Group Theory in Chemistry****Credits 2 to 3. 2 to 3 Lecture Hours.**

Applications of symmetry and group theory to various types of chemical systems; classification of molecules into symmetry point groups and use of character tables.

Prerequisite: Bachelor's degree in chemistry.**CHEM 681 Seminar****Credit 1. 1 Lecture Hour.**

Oral presentations and discussions of recent advances in chemistry.

CHEM 682 Departmental Research Seminar**Credit 1. 1 Lecture Hour.**

Recent and significant research results presented by prominent chemists; interaction with visiting chemists during discussion sessions at the end of each seminar. May be repeated for credit.

Prerequisites: Two semesters of CHEM 681.**CHEM 684 Professional Internship****Credits 1 to 4. 1 to 4 Other Hours.**

Supervised practical experience in professional functions appropriate to career goals in chemical education. Students will be required to complete a scholarly report of these activities acceptable to graduate committee. Enrollment limited to students pursuing a non-thesis MS degree, with emphasis on chemical education. Requires approval of committee chair and department head with non-thesis MS degree plan filed.

Prerequisite: Graduate classification in chemistry.**CHEM 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Special topics to suit small group requirements; more recent problems and results in various branches of chemistry; laboratory work or conference and discussion.

Prerequisite: Graduate classification.**CHEM 686 Ethics in Chemical Research and Scholarship****Credit 1. 1 Lecture Hour.**

Ethical issues in chemical research and scholarship and methods for resolution of such issues; includes Texas A&M University Policies and Procedures, ethics and scientific truth, ethics and other scientists and ethics and society; case studies.

Prerequisite: Graduate classification in chemistry or biochemistry.**CHEM 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 8 Lab Hours.**

Selected topics in an identified area of chemistry. May be repeated for credit.

Prerequisites: Graduate classification and approval of instructor.**CHEM 690 Theory of Chemical Research****Credits 3. 3 Lecture Hours.**

The design of research experiments in various subfields of chemistry and the evaluation of research results with the aid of examples taken from the current scientific literature. May be repeated for credit.

CHEM 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

CHEM 695 Frontiers in Chemical Research**Credit 1. 1 Lecture Hour.**

Present status of research in a variety of significant chemical fields; content depends on the availability of visiting lecturers who will be selected because of distinguished international recognition in their fields of research. May be taken twice.

Prerequisite: Graduate classification.**CHEM 697 Methods in Teaching Chemistry Laboratory****Credit 1. 1 Lecture Hour. 1 Lab Hour.**

An introduction to teaching methods associated with the teaching of introductory chemistry laboratories using graduate teaching assistants. Emphasis placed on effective communication, preparation, record keeping, and safe and effective management of an instructional laboratory. May be repeated for credit.

Prerequisite: Graduate classification in chemistry.

CHEN - Chemical Engineering

CHEN 601 Chemical Engineering Laboratory Safety and Health

Credit 1. 1 Lecture Hour.

Control of hazards associated with chemical engineering research laboratories and the chemical process industry; causes and prevention of accidents, emergency procedures, safety codes, health effects of toxic substances and experimental design for safety.

Prerequisite: Graduate classification.

CHEN 604 Chemical Engineering Process Analysis I

Credits 3. 3 Lecture Hours.

Development and analysis of chemical process models that involve systems of algebraic equations, ordinary differential equations and partial differential equations.

Prerequisite: MATH 308 or approval of instructor.

CHEN 605 Chemical Engineering Process Analysis II

Credits 3. 3 Lecture Hours.

Formulation of mathematical models and solution of resulting mass and energy balance equations by modern computational techniques, applications to separation processes, chemical kinetics, reaction engineering, heat and mass transfer.

Prerequisite: CHEN 320 or approval of instructor.

CHEN 614 Advanced Transport Phenomena I

Credits 4. 4 Lecture Hours.

First part of a two-semester sequence covering advanced transport phenomena; emphasis is placed on momentum transfer or fluid mechanics applied to chemical engineering problems.

Prerequisite: Approval of instructor.

CHEN 615 Advanced Transport Phenomena II

Credits 3. 3 Lecture Hours.

Advanced energy and mass transfer in chemical engineering processes.

Prerequisite: Approval of instructor.

CHEN 623 Applications of Thermodynamics to Chemical Engineering

Credits 3. 3 Lecture Hours.

Application of thermodynamics to chemical engineering operations and processes.

Prerequisite: CHEN 354 or approval of instructor.

CHEN 624 Chemical Engineering Kinetics and Reactor Design

Credits 3. 3 Lecture Hours.

Rates and mechanisms of chemical reactions. Thermal and catalytic reactions both homogeneous and heterogeneous.

Prerequisite: CHEN 464 or approval of instructor.

CHEN 629 Transport Phenomena

Credits 3. 3 Lecture Hours.

Principles of transfer of momentum, energy and mass studied by application to advanced chemical engineering problems. Theoretical analogy of these three modes of transfer.

Prerequisite: CHEN 424 or approval of instructor.

CHEN 631 Process Dynamics and Advanced Process Control

Credits 3. 3 Lecture Hours.

Modeling, analysis, and simulation of linear and nonlinear process systems; model-based control techniques for achieving desired process dynamics.

Prerequisite: CHEN 461 or approval of instructor.

CHEN 633 Thermodynamics and Kinetics of Confined Fluids

Credits 3. 3 Lecture Hours.

Emphasis on fluids, adsorption phenomena (theory and applications), phase transitions in confined fluids (capillary condensation and freezing), the behavior of confined water, reactions in confinement, and applications.

Prerequisite: CHEN 623 or approval of instructor.

CHEN 634 Catalysis and Multiphase Reactor Design

Credits 3. 3 Lecture Hours.

Introduction and overview of catalyzed reactions; topics include heterogeneous catalysis and relevant surface science concepts, mass transport, and reactor design; discussion of industrially relevant chemistries.

Prerequisite: CHEN 624 or approval of instructor.

CHEN 635 Advanced Nanostructured Materials

Credits 3. 3 Lecture Hours.

Chemical synthesis and characterization of materials with structures and properties in the nano-scale; emphasis on the fundamental science and engineering of understanding and manipulating "bottom-up" material formation.

Prerequisite: Approval of instructor.

CHEN 640 Rheology

Credits 3. 3 Lecture Hours.

Principles of stress, deformation and flow; vector and tensor equations of fluid mechanics. Behavior of Newtonian, non-Newtonian and viscoelastic fluids.

Prerequisite: MATH 601 or approval of instructor.

CHEN 641 Polymer Engineering

Credits 3. 3 Lecture Hours.

Principles and practice of polymer structure, synthesis, reaction mechanisms and kinetics; polymer characterization, chemical and physical properties degradation and recycling, melt and solid mechanical and rheological properties. Technology of production and processing operations.

Prerequisite: Graduate classification.

CHEN 642 Colloidal and Interfacial Systems

Credits 3. 3 Lecture Hours.

Fundamental principles related to interactions, dynamic, and structure in colloidal and interfacial systems. Concepts covered include hydrodynamics, brownian motion, diffusion sedimentation, electrophoresis, colloidal forces, surface forces, polymeric forces, aggregation, deposition, equilibrium phase behavior, rheology, and experimental methods.

CHEN 643 Applied Statistical Mechanics of Fluids

Credits 3. 3 Lecture Hours.

Application of molecular theories and computer simulation techniques to describe the thermodynamics and transport properties of fluids and fluid mixtures.

Prerequisite: CHEN 623 or approval of instructor.

CHEN 644 Nanotechnology: The Physics, Chemistry, and Engineering of Nanotechnology

Credits 3. 3 Lecture Hours.

Introduction to the basics and tools of nanotechnology; nanotechnology approaches and algorithms to analyze, design and simulate systems; focus on developing, modifying, adapting and creating tools to solve problems in the field.

Prerequisite: Approval of instructor.

CHEN 645 Fundamentals of Catalysis with Applications**Credits 3. 3 Lecture Hours.**

Principles of catalyst preparation, methods of characterization, catalyst deactivation and regeneration techniques; effect of physical transport processes on the rate of catalytic heterogeneous reactions; kinetics of heterogeneous reactions; laboratory and industrial reactors; application to selected industrial processes.

Prerequisites: CHEN 354; CHEN 464 or approval of instructor.

CHEN 646 Thermodynamics of Oil and Gas and Water Systems**Credits 3. 3 Lecture Hours.**

Techniques to predict the thermodynamic properties of oil and gas and aqueous saline systems; characterization of petroleum fluids; effect of surface tension and confinement; gas hydrate formation, and thermodynamic models for aqueous electrolyte systems and their application to phase equilibrium calculations.

Prerequisites: CHEN 623 or approval of instructor; Qatar campus.

CHEN 650 Introduction to Microfabrication and Microfluidics Technology**Credits 3. 3 Lecture Hours.**

Micro Electro Mechanical Systems (MEMS Technology). To study the fundamentals of fluidics, heat and mass transfer, surface chemistry, and electrochemical interactions.

CHEN 651 Biochemical Engineering**Credits 3. 3 Lecture Hours.**

Integration of principles of engineering, biochemistry and microbiology; application to the design, development and improvement of industrial processes that employ biological materials. Engineering discipline directed toward creative application of interdisciplinary information to the economic processing of biological and related materials.

Prerequisite: Approval of instructor.

CHEN 653 Chemical Engineering in Tissue Engineering and Drug and Gene Delivery**Credits 3. 3 Lecture Hours.**

Application of chemical engineering principles to the examination of tissue engineering systems, metabolic engineering systems, drug design and delivery, and gene delivery.

Prerequisite: Approval of instructor.

CHEN 655/SENG 655 Process Safety Engineering**Credits 3. 3 Lecture Hours.**

Applications of engineering principles to process hazards analysis including source and dispersion modeling, emergency relief systems, fire and explosion prevention and mitigation, hazard identification, risk assessment, process safety management, etc.

Prerequisite: Approval of instructor.

Cross Listing: SENG 655/CHEN 655.

CHEN 656 Advanced Process Chemical Optimization I**Credits 3. 3 Lecture Hours.**

State-of-the-art optimization based techniques for process synthesis, process design and process operability; emphasis on mathematical modeling via mixed integer and continuous optimization formulations; application to heat integration problems; use of modeling/optimization software systems.

Prerequisites: Graduate classification; or approval of instructor.

CHEN 658 Fundamentals of Environmental Remediation Processes**Credits 3. 3 Lecture Hours.**

Fundamental approach to various remediation technologies, topics in environmental thermodynamics and mass transfer, adsorption, desorption, ion exchange, air stripping, extraction, chemical oxidation, biodegradation.

Prerequisite: Graduate classification in engineering.

CHEN 660 Quantitative Risk Analysis**Credits 3. 3 Lecture Hours.**

Fundamental concepts, techniques, and applications of quantitative risk analysis and risk-informed decision making for all engineering fields; practical uses of probabilistic methods are demonstrated in exercises and case studies from diverse engineering areas.

Prerequisites: Graduate classification.

Cross Listing: SENG 660 and ISEN 660.

CHEN 661 Optimization of Chemical Engineering Processes**Credits 3. 3 Lecture Hours.**

Methods of optimization applied for the design and control of chemical engineering processes.

Prerequisite: Approval of instructor.

CHEN 662 Computational Chemistry and Molecular Modeling for Engineers**Credits 3. 3 Lecture Hours.**

Applications of computational chemistry and molecular modeling relevant to engineers, especially predictions for thermophysical properties and reaction rates; emphasis on the creative and intelligent use of commercial software to solve practical problems; problems relevant to process safety engineer.

Prerequisites: CHEN 623 and 624 or approval of instructor.

CHEN 663 Systems Biology**Credits 3. 3 Lecture Hours.**

Introduction to experimental and computational techniques in systems biology; includes high throughput experiments, data analysis, modeling and simulation; discussion in the context of specific applications such as signal transduction.

Prerequisite: Approval of instructor.

CHEN 664 Global Optimization of Chemical Engineering Problems**Credits 3. 3 Lecture Hours.**

Advances in global optimization and applications to chemical engineering systems; modeling and formulation of optimization problems, general theories and techniques of global optimization, and applications to problems on process design and integration.

Prerequisite: Approval of instructor.

CHEN 665 Sustainable Design of Chemical Processes**Credits 3. 3 Lecture Hours.**

Sustainability in chemical engineering; includes sustainable approaches to design and development of processes, products, energy usage; issues and roles of chemical engineers, service learning.

Prerequisite: Graduate and senior classification in engineering or approval of instructor.

CHEN 670 Computational Materials Science and Engineering**Credits 3. 3 Lecture Hours.**

Modern methods of computational modeling and simulation of materials properties and phenomena, including synthesis, characterization, and processing of materials, structures and devices; quantum, classical, and statistical mechanical methods, including semi-empirical atomic and molecular-scale simulations, and other modeling techniques using macroscopic input.

Prerequisites: Approval of instructor; graduate classification.

Cross Listing: MSEN 670 and MEMA 670.

CHEN 675 Microelectronics Process Engineering**Credits 3. 3 Lecture Hours.**

State-of-art process engineering principles on microelectronics, especially for the fabrication of very large scale integrated circuits (VLSICs); fundamental unit processes, such as thin film deposition, thermal growth, lithography, etching and doping, material structures and properties, and basic device operation principles.

Prerequisites: CHEN 623 and CHEN 624 or approval of instructor.

CHEN 676 Sustainable Design through Process Integration**Credits 3. 3 Lecture Hours.**

Systematic and state-of-the-art techniques for the sustainable design of chemical processes; emphasis on holistic and systematic approaches using process integration for the conservation of natural resources and the enhancement of process performance; includes visualization, algebraic and mathematical optimization approaches.

Prerequisites: Graduate classification or approval of instructor.

CHEN 677 Advanced Process Integration and Synthesis**Credits 3. 3 Lecture Hours.**

Systematic and state-of-the-art techniques of understanding the global insights of mass and energy flows within a process; use of integrated insights to optimize process performance; includes a variety of mathematical and visualization tools.

Prerequisite: Approval of instructor.

CHEN 681 Seminar**Credits 0-1. 0-1 Lecture Hours.**

Presentations and discussions covering problems of current importance in chemical engineering research.

CHEN 684 Professional Internship**Credit 1. 1 Other Hour.**

Engineering research experience in industrial setting away from Texas A&M campus; projects supervised jointly by faculty and industrial representative.

Prerequisites: Approval of student's advisory committee chair and department head.

CHEN 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Limited investigations in fields other than those chosen for thesis or dissertation research and not covered by other formal courses.

Prerequisite: Approval of department head.

CHEN 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in particular areas of chemical engineering. May be repeated for credit.

Prerequisites: Approval of department head and instructor.

CHEN 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of department head.

CHEN 695 Graduate Mentoring Seminar I**Credit 1. 1 Lecture Hour.**

Development of skills to compliment formal research and coursework training; includes improvement of communication and interaction skills; development of technical writing and presentation skills.

Prerequisites: Four chemical engineering core graduate courses; graduate advisor approval.

CHEN 696 Graduate Mentoring Seminar II**Credit 1. 1 Lecture Hour.**

Development of a variety of skills to compliment formal research and coursework training; includes improvement to communication/ interaction with students in a classroom setting, and improvement and development of teaching skills. Must be taken on a satisfactory/ unsatisfactory basis.

Prerequisites: 4 CHEN core graduate courses, CHEN 695; graduate advisor approval.

CLAS - Classics

CLAS 692 Readings**Credits 3. 3 Lecture Hours.**

Readings in Greek or Latin literary texts in the original language.

Prerequisite: Graduate classification.

CLEN - College of Engineering

CLEN 689 Special Topics In**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of engineering. May be repeated for credit.

Prerequisite: Graduate classification.

CLSL - School of Law

CLSL 7600 Law School Study Abroad**Credits 0 to 4. 0 to 4 Other Hours.**

For law students in an approved study abroad program. May be taken 3 times.

Prerequisites: Professional law classification; approval of dean.

COMM - Communication

COMM 610 Social Science Methods in Communication Research**Credits 3. 3 Lecture Hours.**

Examination of social science research methods in communication, including design, measurement and analysis for descriptive and experimental research; practice in evaluating and conducting research projects.

Prerequisite: Graduate classification or approval of instructor.

COMM 611 Advanced Quantitative Methods in Communication Research**Credits 3. 3 Lecture Hours.**

In-depth exploration of the philosophical underpinnings of quantitative research, research design and statistical analysis of quantitative data in communication research; examination of regression-based modeling and its extensions, including ordinary least squares (OLS), analysis of categorical dependent variables, interactive effects, statistical mediation; introduction to structural equation modeling.

Prerequisites: COMM 610; graduate classification.

COMM 615 Interpretive Methods in Communication Research**Credits 3. 3 Lecture Hours.**

Introduction to interpretive and qualitative methods in communication research; underlying epistemologies, design issues, and explanation of knowledge claims; methods including participant observation and interviewing.

Prerequisite: Graduate classification.

COMM 616 Topics in Communication Methods**Credits 1 to 3. 1 to 3 Lecture Hours.**

Focused and in-depth examination on theory and practice of single method in communication research; includes surveys, interviewing, focus groups, ethnography, digital methods, rhetorical field methods, engage scholarship, historiography and experimental design. May be repeated for credit up to 12 hours.

Prerequisite: Graduate classification.**COMM 620 Communication Theory****Credits 3. 3 Lecture Hours.**

The nature and role of communication theory; systems of ontology and epistemology in theory development; critical review of current theories concerning communication codes, functions and processes in various contexts.

Prerequisite: Graduate classification or approval of instructor.**COMM 625 International Communication and Public Diplomacy****Credits 3. 3 Lecture Hours.**

Exploration of the intersections of culture, media and communication; emphasis on the role of communication in public diplomacy; examination of global media, international relations and globalization and media technologies on issues of cultural identity and geopolitics and the policy discussions emerging from that impact.

Prerequisite: Graduate classification.**COMM 626 Communication Law and Policy****Credits 3. 3 Lecture Hours.**

Foundations of law and policy as the context for all communication, online or off; issues such as free speech, privacy and surveillance, intellectual property rights, access to information, extreme speech, public diplomacy, cybersecurity and network neutrality; mechanisms and effects of policy-making by governments, international and global organizations and via technical standard-setting and algorithms; roles of civil society and corporations in policy-making and implementation; methods for legal research and for law and society research.

Prerequisites: Graduate classification.**COMM 628 Political Communication****Credits 3. 3 Lecture Hours.**

Interdisciplinary study of the intersection of politics and communication, especially the communications strategies of political elites; structure of media institutions and media technologies within democratic societies; effects of mediated communications on public opinion.

Prerequisites: Graduate classification.**COMM 630 Interpersonal Communication****Credits 3. 3 Lecture Hours.**

Major theories in interpersonal communication; critical examination of current research programs on communication in interpersonal influence, relational development and conflict management.

Prerequisite: Graduate classification.**COMM 631 Group Communication****Credits 3. 3 Lecture Hours.**

Major concepts and theories of communicative processes in task-oriented groups from a social scientific perspective; the role of group communication in (1) group decision processes, (2) decision development, (3) decision-making agendas, and (4) conflict and performance quality.

Prerequisite: Graduate classification.**COMM 632 Communication and Conflict****Credits 3. 3 Lecture Hours.**

Elements and central features of conflict theories and different approaches to communication in conflict management; analysis of communication research in interpersonal, family/marital, group, organizational, and public conflicts and the role of the media in social and international disputes.

Prerequisite: Graduate classification.**COMM 634 Communication and Gender****Credits 3. 3 Lecture Hours.**

Gender considered as a complex phenomenon constituted through communication; topics include femininities, masculinities, language, power, nonverbal behavior, gender in media, organizations, interpersonal relationships, and social movements.

Prerequisite: Graduate classification.**COMM 636 Survey of Organizational Communication****Credits 3. 3 Lecture Hours.**

Theoretical and empirical literature on human communication and complex organizations; the study of messages, interaction, and meaning in the process of organizing; topics include superior-subordinate communication, communication networks, and technologies, language, message flow, symbols and organizational culture, negotiation and conflict, and power and politics.

Prerequisite: Graduate classification.**COMM 637 Organizational Communication Seminar****Credits 3. 3 Lecture Hours.**

Investigation of a subject important to the understanding of organizational communication, such as communication and organizational decision-making, group communication within organizations, communication and organizational culture, and organizational rhetoric and issue management. May be repeated for credit with different content up to a total of four times.

Prerequisite: Graduate classification.**COMM 638 Crisis Communication****Credits 3. 3 Lecture Hours.**

Focuses on crisis communication theory and research as it applies to organizations; differentiation between the various crisis communication theories; application of various crisis communication theories to crisis cases; understanding the relationship between crisis and risk communication.

Prerequisite: Graduate classification.**COMM 640 Rhetorical Theory****Credits 3. 3 Lecture Hours.**

Close reading of classical and contemporary systems of rhetoric; survey of principal applications to communication theory and research.

Prerequisite: Graduate classification or approval of instructor.**COMM 645 Rhetorical and Textual Methods in Communication Research**
Credits 3. 3 Lecture Hours.

Comparative study of traditional and contemporary perspectives on the description, interpretation, and evaluation of public discourse, including textual analysis, neo-classical analysis, Burkean criticism, quantitative and qualitative approaches to content analysis, fantasy theme analysis, and semiotic analysis.

Prerequisite: Graduate classification or approval of instructor.

COMM 649 American Public Discourse to 1865**Credits 3. 3 Lecture Hours.**

Public discourse and political rhetoric in America in colonial and pre-Civil War years; historical, conceptual, and practical examination of political campaign rhetoric, legislative rhetoric, judicial rhetoric, and advocacy group rhetoric.

Prerequisite: Graduate classification.**COMM 650 American Public Discourse Since 1865****Credits 3. 3 Lecture Hours.**

Public discourse and political rhetoric in America in post-Civil War years; historical, conceptual, and practical examination of political campaign rhetoric, legislative rhetoric, judicial rhetoric, and advocacy group rhetoric.

Prerequisite: Graduate classification.**COMM 651 Presidential Communication****Credits 3. 3 Lecture Hours.**

Examination of discourse of, about and from American presidents, including principal genres of presidential communication, speechwriting and media strategies; case studies of presidential communication ranging from campaigns, oratory, to crisis rhetoric and ceremonial address.

Prerequisite: Graduate classification.**COMM 652 The Rhetoric of Social Movements****Credits 3. 3 Lecture Hours.**

Analysis of persuasive strategies used to build social identities and collectively agitate for social change; exploration of the history of social movements in the United States and abroad.

COMM 653 Rhetoric and Public Culture**Credits 3. 3 Lecture Hours.**

Examination of how artifacts of public culture function rhetorically to transform public attitudes, opinion and memory; analysis of documents, artworks, images and histories from a humanities and social science perspective.

COMM 654/ENGL 654 Classical Rhetoric**Credits 3. 3 Lecture Hours.**

Origins of rhetoric in classical Greece and Rome; exploration of the relationship between philosophy, rhetoric and democratic political culture; the contemporary relevance of classical thought to contemporary problems.

Cross Listing: ENGL 654/COMM 654.**COMM 655/ENGL 655 Contemporary Theories of Rhetoric****Credits 3. 3 Lecture Hours.**

Investigation of the major figures in rhetorical theory in the 20th and 21st centuries; analysis of the relationship between rhetoric and power; identifying new challenges for rhetoric in global, multicultural, technological age. May be repeated for credit.

Cross Listing: ENGL 655/COMM 655.**COMM 656/WGST 652 Feminism and Rhetoric****Credits 3. 3 Lecture Hours.**

Historical development of the ideology, theory and rhetorical practices of U.S. feminism; criticism of significant artifacts of women orators and writers from the 19th century to contemporary times.

Cross Listing: WGST 652/COMM 656.**COMM 658 Seminar in Communication and Culture****Credits 3. 3 Lecture Hours.**

Investigation of the ways that culture, religion, identity, gender, popular culture, community, history, and related ideas are shaped through communication in order to understand the development of social norms, political values, and the human experience. May be repeated for credit with different content up to a total of three times.

Prerequisite: Graduate classification.**COMM 659 Communication and Citizenship in the Public Sphere****Credits 3. 3 Lecture Hours.**

Theoretical examination of communication within democratic, republican, and liberal conceptions of citizenship; consideration of the ideal of the public sphere, and communication in global civil society; specific attention to the practices of American citizenship within the global civil society.

Prerequisite: Graduate classification.**COMM 661 Media and Identity****Credits 3. 3 Lecture Hours.**

Representations of identity in media and popular culture; how media and technology use shape and are shaped by identity; media as sites for negotiation and construction of identities such as gender, race, ethnicity, sexuality, social class, physical/mental ability, nationality and religion; impacts and effects of media stereotypes and counter-stereotypes; positive storytelling, counter-narratives and media initiatives that resist mainstream portrayals; media activism and social justice.

Prerequisites: Graduate classification.**COMM 662 Survey of Media Studies****Credits 3. 3 Lecture Hours.**

Survey of research and theory in media studies; overview of the historical and theoretical orientation of media studies and mediated communication; examination of approaches to analyzing media texts, technologies, audiences, reception processes, economics and/or industries.

Prerequisite: Graduate classification.**COMM 663 Seminar in Media Studies****Credits 3. 3 Other Hours.**

Intensive work on selected topics of research in media studies; may address work in the areas of audience studies, media effects, industries, policy, international issues, media and culture, media history or theory. May be repeated for credit with different content up to a total of three times.

Prerequisite: Graduate classification.**COMM 664 Media Processes and Effects****Credits 3. 3 Lecture Hours.**

Investigation of processes through which mediated messages influence our everyday lives; examination of social scientific approaches; understanding how viewers select, interpret and respond to mediated messages; includes media representations, mediated inter-group processes, news framing, political advertising, persuasive messages, entertainment media, popular culture, health campaigns, positive media psychology, new media technologies, pro-social media effects and critical media literacy.

Prerequisite: Graduate classification.

COMM 665 Communication and Technology**Credits 3. 3 Lecture Hours.**

Examines the relationships between human communication and technology, investigating the social effects of communication technologies, the quality of messages, communicative practices, and rhetorical norms that typify effective communication in technological society.

Prerequisite: Graduate classification.**COMM 667 Media and Health****Credits 3. 3 Lecture Hours.**

Examination of theories, methods and research that characterize the use of media in health contexts; focus on mass media influence on public health and/or strategic use of mass media to promote health behaviors; engagement of social and behavioral science approaches to media effects and/or critical perspectives on the study of media as social institutions. May be taken three times for credit.

Prerequisite: Graduate classification.**COMM 669 Survey of Health Communication****Credits 3. 3 Lecture Hours.**

Theories and research in health communication considering functions and outcomes of communication processes in various health contexts, ranging from interpersonal settings to public campaigns; emphasis on providing a framework for synthesizing and critically evaluating health communication research.

Prerequisite: Graduate classification.**COMM 670 Health Communication Seminar****Credits 3. 3 Lecture Hours.**

Investigation of a subject important to the understanding of health communication, such as persuasion and public health campaigns, physician-patient communication, or communication in health care organizations. May be repeated for credit with different content up to a total of three times.

Prerequisites: Graduate classification and approval of instructor.**COMM 671 Interdisciplinary Seminar in Prevention Science****Credit 1. 1 Lecture Hour.**

Contemporary research programs that represent the interdisciplinary field of prevention science; strengths and limitations of diverse theoretical and conceptual bases of research in prevention science; application of research findings to issues related to the prevention of mental, emotional, and physical health problems and the promotion of well-being. May be taken 3 times for credit.

Prerequisite: Graduate standing and enrollment in the interdisciplinary graduate certificate in prevention science or approval of instructor.**Cross Listing:** HLTH 671, RPTS 620 and SPSY 620.**COMM 681 Professional Seminar****Credits 0-1. 0-1 Other Hours.**

Provides socialization to the profession of communication, focusing on graduate students' roles as scholars and teachers; provides instruction on teaching communication, conducting and writing publishable research, and fulfilling responsibilities to one's organization and profession. May be repeated up to three times.

Prerequisite: Graduate classification.**COMM 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Directed studies in specific problem areas in communication. Student may take up to two sections of directed studies in communication in the same semester, with a maximum of 6 credits.

Prerequisite: Approval of department head.**COMM 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of communication. May be repeated for credit.

Prerequisite: Approval of instructor.**COMM 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

COSC - Construction Science

COSC 601 Construction Practices**Credits 3. 3 Lecture Hours.**

Materials and methods of construction with emphasis on the design and construction process; includes structural steel and other metals, foundation materials, precast and tilt wall concrete, concrete reinforcement including pre-stressing, wood dimension lumber framing, and heavy timber framing.

COSC 602 Construction Cost Estimating**Credits 3. 3 Lecture Hours.**

Determination of quantities for various types of construction materials and works including earthwork, foundations, structural systems, mechanical and electrical systems, and building finishes; methods used for pricing of construction works including labor, materials, equipment, sub-contractors, overhead and profit; use of various types of cost data catalogs available in the industry.

COSC 603 Construction Scheduling**Credits 3. 3 Lecture Hours.**

Introduction to commonly used techniques and computer applications for the planning, scheduling, monitoring, and controlling of construction projects; includes key scheduling techniques such as Gantt Chart, CPM, PERT, LSM, and EVM; practical scheduling practices such as tracking, controlling, and forecasting trends of schedules, cost control, and reporting.

Prerequisite: COSC 602 or equivalent.**COSC 606 Mechanical and Electrical Construction****Credits 3. 3 Lecture Hours.**

Building environmental systems with a major emphasis on the design and control of the heating, ventilation and cooling systems, plumbing and drainage systems, electrical, fire and lightening protection, and lighting; design opportunities, calculations, equipment selection and economics as they relate to design and construction.

COSC 608 Structural Principles and Practices**Credits 3. 3 Lecture Hours.**

Investigations into practical applications of structural design including the analysis and design of structural members in steel and concrete; surveys and studies of various structural systems.

COSC 620 Construction Company Operations**Credits 3. 3 Lecture Hours.**

Running a construction company; strategic planning; business planning; organizational theory; competitor analysis; risk management; financial analysis; human resources; management information systems; leadership; codes of ethics; best practices.

COSC 621 Advanced Project Management**Credits 3. 3 Lecture Hours.**

Theoretical, practical, and strategic development in the management of contemporary construction projects; advanced techniques used in scheduling and evaluating progress in construction project control; exploration of state-of-the-art management principles and practices, and development of additional insights.

Prerequisite: COSC 603 or COSC 475.

COSC 622 Construction Economics**Credits 3. 3 Lecture Hours.**

Foundation in Life Cycle Cost Analysis computation within the context of current issues in environmental sustainability and evidence-based thinking; lean construction as a strategy to overcome the hurdle of first cost.

COSC 624 Construction Business Development**Credits 3. 3 Lecture Hours.**

Acquisition of new work in the construction industry; understanding available project delivery systems; competitor analyses; acquisition procedures including response techniques for complex requests for proposals; understanding concepts of sales and marketing, branding, backlog, and business development budgeting in construction.

COSC 628 Construction Contracts and Risk Management**Credits 3. 3 Lecture Hours.**

Advanced construction law, contracts, and risk management applicable to construction management; identification of common disputes and construction risks among the owner, design professionals, and contractor; analysis of construction contracts with an emphasis on troublesome provisions and solutions; demonstration of tools of negotiation and dispute resolution; ethics in construction.

COSC 631 Advanced Productivity and Lean**Credits 3. 3 Lecture Hours.**

Introduction to lean history, concepts and methods; deduction of basic training modules in lean project delivery; application of lean management in construction projects.

COSC 642 Construction Information Technology**Credits 3. 3 Lecture Hours.**

Exploration of emerging technologies for the construction industry including hardware and software systems such as BIM, RFID, Wireless/Mobile, information systems, construction specific programs, and information strategy planning; using information strategy planning by owners and contractors to effectively enhance the management of business entities and projects in construction.

COSC 644 Advanced Construction Systems**Credits 3. 3 Lecture Hours.**

Theoretical, practical, and strategic development in contemporary construction systems; exploration of state-of-the-art innovations in environmental control systems, structural principles and practices; integration of innovations with information technologies, and development of additional insights.

COSC 650 Advanced Construction Visualization**Credits 3. 3 Lecture Hours.**

Introduction to the theory and application of 3-D computer models in the design/build construction process; creation, positioning in 3-D space, and linking of building components to a database record; creation of a wide range of construction related information useful in controlling project quality.

COSC 663 Sustainable Construction**Credits 3. 3 Lecture Hours.**

Contribution of materials and methods to meeting the needs of the present without compromising the ability of future generations to meet their own needs; overview of international, national and local programs promoting sustainable construction; characteristics of the components of successful sustainable construction projects; theories and practices through case studies.

COSC 670 Facilities Asset Management**Credits 3. 3 Lecture Hours.**

Fundamentals of facility asset management and property management including concepts, theories, and principles of design, construction, accounting, finance, and management of the built environment; an overview of a project throughout its entire life cycle from various perspectives including the owner, users, designers, constructors and facility management personnel.

COSC 681 Seminar**Credit 1. 1 Lecture Hour.**

Discussion and review of degree requirements, career opportunities, and current research activities in construction management.

Prerequisite: Graduate classification.

COSC 684 Professional Internship**Credits 3 to 6. 3 to 6 Other Hours.**

Approximately 400-600 hours with a construction or construction-related company that exposes the student to construction-related activities; an initial report, monthly progress reports, a final report, and a final completion letter are required.

Prerequisites: Graduate classification; approval of graduate coordinator; approval of internship coordinator.

COSC 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Individual problems in the area of building construction involving the application of theory and practice.

Prerequisite: Approval of instructor.

COSC 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified field of construction management. May be repeated for credit.

Prerequisite: Approval of instructor.

COSC 690 Theory of Research in Construction Management**Credits 3. 3 Lecture Hours.**

Introduction to research, research tools, proposal writing and research reports; emphasis on research planning and design, conducting a comprehensive review of literature, quantitative and qualitative research methodologies, defining research problems in construction science, and the development of research proposals.

Prerequisite: STAT 651 or concurrent enrollment.

COSC 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

Prerequisites: COSC 690 or concurrent enrollment; approval of graduate coordinator.

COSC 693 Professional Study**Credits 1 to 6. 1 to 6 Other Hours.**

Approved professional study of project undertaken as terminal requirement for Master of Science, non-thesis option. Preparation of a record of study summarizing the rationale, procedure and results of the completed study. May be repeated for credit.

Prerequisite: COSC 690 or concurrent enrollment; approval of graduate coordinator.

CPSY - Counseling Psychology

CPSY 600 Counseling Theories for School Counselors**Credits 3. 3 Lecture Hours.**

Overview of various counseling theories and its application in a school setting.

Prerequisites: CPSY 630.

CPSY 601 Multicultural Counseling in Schools**Credits 3. 3 Lecture Hours.**

Intersecting role of ethnicity, cultural background, gender and sexual orientation and how they shape the psychosocial development of children and adolescents and impact their educational trajectories; development and appreciation of cultural and ethnic differences among individuals, groups and families to enhance school counseling service delivery.

Prerequisites: Graduate classification; approval of department head.

CPSY 602 Counseling Techniques for School Counselors**Credits 3. 3 Lecture Hours.**

Broad view of counseling techniques using a microskills approach; opportunities to observe and practice counseling techniques.

Prerequisites: CPSY 630; graduate classification; approval of department head.

CPSY 603 School Counseling Group Interventions**Credits 3. 3 Lecture Hours.**

Development of group counseling interventions for children and adolescents in school settings.

Prerequisites: Graduate classification; approval of department head.

CPSY 612 Planning and Organizing Comprehensive Guidance Programs**Credits 3. 3 Lecture Hours.**

Purposes and functions of a guidance program; components of a comprehensive guidance program; systems approach to implementing a comprehensive guidance program for elementary and secondary students and adults.

Prerequisite: Approval of department head.

CPSY 626 Psychopathology**Credits 3. 3 Lecture Hours.**

Causes, course, outcomes and treatment of abnormal and maladaptive behavior; degrees of variation possible from normal adaptive behavior; biological, developmental, social, cultural and psychological perspective on abnormal behavior.

Prerequisite: Graduate classification.

CPSY 630 Foundations of School Counseling**Credits 3. 3 Lecture Hours.**

Philosophical, psychological, and sociological concepts fundamental to counseling in schools.

Prerequisite: Graduate classification; Approval of department head.

CPSY 631 Techniques of Counseling**Credits 3. 3 Lecture Hours.**

Methods and procedures descriptive of the counseling process; dynamics of counselor-counselee relationship; interviewing techniques; use of test results in counseling.

Prerequisites: CPSY 630; approval of department head.

CPSY 632 Career Counseling**Credits 3. 3 Lecture Hours.**

Theories of career development; sources, classification and analysis of educational, occupational and social information including occupational trends, post-secondary programs and financial planning; use of occupational-educational information, appropriate psychological measures and computerized guidance systems.

Prerequisite: CPSY 679.

CPSY 633 Introduction to Group Process**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Principles, procedures and processes of group approaches to assisting individuals in their personal growth and development in education, public and mental health settings; participation as member of a personal growth required.

Prerequisites: CPSY 630; approval of department head.

CPSY 634 Group Counseling and Psychotherapy.**Credits 3. 3 Lecture Hours.**

Major contemporary approaches to group counseling and psychotherapy in mental and public health settings; experiential learning in a simulated group process; integration of theory and practical applications.

Prerequisites: CPSY 631; CPSY 633 or equivalent; approval of department head.

CPSY 635 Social Counseling Psychology Interface**Credits 3. 3 Lecture Hours.**

Provides a foundation in theory and research at the interface of social and counseling psychology; fundamentals of social psychology theories, methodologies and perspectives; understanding the relevance to counseling psychology practice; focus on social and cognitive theories, concepts, and processes rather than specific psychological disorders.

Prerequisite(s): Doctoral student in good standing in counseling, clinical, school or social psychology.

CPSY 636 Psychological Consultation to Organizations**Credits 3. 3 Lecture Hours.**

Focuses on organizations as the target of analysis, intervention, and change; established social science concepts and principles; consideration of concepts, intervention strategies, and skills that extend beyond those used in counseling and psychotherapy; highlights consultation as a mode of change agency; considerable attention given to putting theory into practice.

Prerequisites: Graduate classification; approval of department head; approval of instructor.

CPSY 637 Latino Psychology**Credits 3. 3 Lecture Hours.**

Examination of psychological research and literature related to Latino experience in the U.S. via readings, media and class discussion; introduction to various Latino groups with the primary focus on individuals of Mexican descent.

Prerequisites: Graduate classification; approval of department head.

CPSY 639 Counseling Practicum I**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Supervised experience in individual counseling; cases engaged in the counseling laboratory on campus; off-campus counseling in schools and various public and mental health settings also assigned at supervisor's discretion. May be taken for credit 2 times as content varies.

Prerequisites: CPSY 631 and CPSY 632; approval of instructor six weeks prior to registration; approval of department head.

CPSY 662 Professional Issues in Counseling Psychology**Credits 3. 3 Lecture Hours.**

Legal, ethical, economic and practical issues that impact the training, credentialing, placement and marketing of counseling psychologists and their services.

Prerequisite: Approval of department head.

CPSY 664 Counseling Practicum II**Credits 3. 6 Lab Hours. 1 Other Hour.**

Supervised experience in individual and group counseling requiring advanced technical skills; continuing counseling relationships with various, selected subjects.

Prerequisites: CPSY 639; approval of department head six weeks prior to registration.

CPSY 666 Practicum in Counselor Supervision**Credits 3. 6 Lab Hours. 1 Other Hour.**

Supervised experience in directing counseling and guidance activities of students involved in practicum and field experiences; intended for individuals preparing to become counselor educators or supervisors.

Prerequisites: CPSY 664; approval of department head; application six weeks prior to registration.

CPSY 671 Dying and Bereavement**Credits 3. 3 Lecture Hours.**

Exposure to experiences of others on the topic of dying and loss both through readings and through class presentations and discussions; offers new ways to think about death in general, as well as one's own death and those of one's loved ones; provides mental health provider a foundation in concepts/process of death, loss and bereavement.

Prerequisites: Graduate classification and approval of department head.

CPSY 672 Theories of Counseling and Psychotherapy**Credits 3. 3 Lecture Hours.**

Comprehensive and intensive study of major theoretical positions in counseling and psychotherapy; implications for research and practice in public and mental health settings.

Prerequisites: CPSY 631; approval of department head.

CPSY 673 Advanced Psychotherapeutic Skills**Credits 3. 3 Lecture Hours.**

Didactic/experiential course, designed for students in professional psychology programs; variety of psychotherapeutic interventions in short and long term counseling with adults in public and mental health settings; ways to access affective process.

Prerequisites: Practicum; approval of instructor and department head.

CPSY 676 Family Counseling and Psychotherapy**Credits 3. 3 Lecture Hours.**

Basic concepts and techniques in marriage and family counseling in public and mental health settings; marital communication and growth relationships.

Prerequisites: CPSY 631 and CPSY 633; approval of instructor and department head.

CPSY 677 Practicum in Clinical Geropsychology**Credits 3. 1 Lecture Hour. 6 Other Hours.**

Practicum in theory and strategies for providing mental health services to the elderly; training and supervision of individual counseling and community mental health approaches in a variety of settings.

Prerequisites: Human service experience; approval of instructor and department head.

CPSY 678/PSYC 678 Couples Therapy**Credits 3. 3 Lecture Hours.**

Theory and practice of marital therapy emphasizing systems and communication approaches; effective strategies and techniques for use in public and mental health settings; therapy with specific marital problems and obstacles to effective therapy. Repeatable to 6 hours.

Prerequisites: CPSY 631 and CPSY 639 or equivalent; approval of instructor.

Cross Listing: PSYC 678/CPSY 678.

CPSY 679 Multicultural Counseling**Credits 3. 3 Lecture Hours.**

Effective communication skills in cross-cultural counseling or helping relationships in public and mental health settings; integration of theoretical knowledge with experiential learning; psychosocial factors and lifestyles of cultural groups; effect on counseling relationships.

Prerequisites: Graduate classification and approval of department head.

CPSY 683 Field Practicum**Credits 1 to 15. 1 to 15 Other Hours.**

Supervised experience in professional public and mental health settings in counseling psychology; wide range of practical experiences and activities that are closely supervised by departmental faculty. May be taken up to 30 hours.

Prerequisite: Graduate classification; approval of department head.

CPSY 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Limited to advanced doctoral students; faculty supervised experience in approved professional public and mental health employment settings; application for September assignments must be approved the previous October. May be repeated up to 9 hours.

Prerequisites: Completion of required coursework except CPSY 684 and CPSY 691; approval of department head.

CPSY 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems.

Prerequisite: Approval of department head.

CPSY 688/EPsy 688 Research Proposal Development**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

This seminar models the processes of developing and defending research proposals.

Prerequisites: EPsy 640 and EPsy 641 or approval of instructor; approval of department head.

Cross Listing: EPsy 688/CPSY 688.

CPSY 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.**

Selected topic in an identified area of counseling psychology. May be repeated for credit.

Prerequisite: Approval of department head.

CPSY 690 Theory of Counseling Psychology Research**Credits 3. 3 Lecture Hours.**

Theory and design of research problems and experiments in counseling psychology; communication of research proposals and results; evaluation of current research of faculty and students and review of current literature. May be repeated for credit.

Prerequisite: Approval of instructor and department head.**CPSY 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of department head.

CSCE - Computer Sci. & Engr.

CSCE 601 Programming with C and Java**Credits 3. 3 Lecture Hours.**

Survey of the C and Java programming languages, including principles of procedural and object-oriented languages; multi-disciplinary applications including business, Internet and engineering problems.

Prerequisite: Graduate classification.**CSCE 602 Object-Oriented Programming, Development and Software Engineering****Credits 3. 3 Lecture Hours.**

Teaches Object-Oriented Programming in C++; software engineering techniques presented to teach how to build high quality software; semester project gives quasi-real-world experience with issues such as requirements capture and object-orient development.

Prerequisites: CSCE 601 or approval of instructor; graduate classification.**CSCE 603 Database Systems and Applications****Credits 3. 3 Lecture Hours.**

Introduction to the concepts and design methodologies of database systems for non-computer science majors; emphasis on E. F. Codd's relational model with hands-on design application. Only one of the following will satisfy the requirements for a degree: CSCE 310 and CSCE 603.

Prerequisites: CSCE 601; graduate classification.**CSCE 604 Programming Languages****Credits 3. 3 Lecture Hours.**

Study in the design space of programming languages, covering language processing, formalisms to describe semantics of programming languages, important concepts found in current programming languages, and programming paradigms.

Prerequisite: Graduate classification.**CSCE 605 Compiler Design****Credits 3. 3 Lecture Hours.**

Advanced topics in compiler writing; parser generators and compiler-compilers; dynamic storage and scope resolution; data flow analysis and code optimization.

Prerequisite: CSCE 434.**CSCE 606 Software Engineering****Credits 3. 3 Lecture Hours.**

Development of advanced concepts in software engineering; software development environments as a mechanism for enhancing productivity and software quality; the classification, evaluation and selection of methodologies for environments; rapid prototyping and reusability concepts; artificial intelligence techniques applied to software engineering.

Prerequisite: CSCE 431 or approval of instructor.**CSCE 608 Database Systems****Credits 3. 3 Lecture Hours.**

Database modeling techniques; expressiveness in query languages including knowledge representation; manipulation languages data models; physical data organization; relational database design theory; query processing; transaction management and recovery; distributed data management.

Prerequisite: CSCE 310 or CSCE 603.**CSCE 610 Hypertext/Hypermedia Systems****Credits 3. 3 Lecture Hours.**

Comprehensive coverage of Hypertext/Hypermedia; basic concepts and definitions; fundamental components, architectures and models; problems and current solutions; design and implementation issues; and research issues.

Prerequisites: CSCE 310 or CSCE 603; CSCE 313.**CSCE 611 Operating Systems and Applications****Credits 3. 3 Lecture Hours.**

Review of computer architecture hardware/software evolution leading to contemporary operating systems; basic operating systems concepts; methods of operating systems design and construction; algorithms for CPU scheduling memory and general resource allocation; process coordination and management; case studies of several operating systems; quality-of-services of operating systems and their impact on applications. Only one of the following will satisfy the requirements for a degree: CSCE 410 and CSCE 611.

Prerequisites: CSCE 313; graduate classification.**CSCE 612 Applied Networks and Distributed Processing****Credits 3. 3 Lecture Hours.**

Fundamentals, including network design and protocol analysis, in the context of computer communications; mixes fundamentals with both programming and pragmatic views of engineering issues; it includes network architecture as well as principles of network engineering; focus is on applying principles of layered architecture to analyzing real networks; lab exercises focus on protocol understanding and programming; knowledge of UNIX and C programming helpful, but not required. Only one of the following will satisfy the requirements for a degree: CSCE 463 and CSCE 612.

Prerequisite: Graduate classification.**CSCE 613 Operating Systems****Credits 3. 3 Lecture Hours.**

Analysis of algorithms in computer operating systems; sequencing and control algorithms supporting concurrent processes; scheduling algorithms to minimize execution times and mean flow times; algorithms for allocating tasks to processors; allocation of memory (virtual and real); direct access device schedules; auxiliary and buffer storage models.

Prerequisite: CSCE 313 or CSCE 611.**CSCE 614 Computer Architecture****Credits 3. 3 Lecture Hours.**

Reviews of von Neumann architecture and its limitations; parallel computer structures and concurrent computation; pipeline computers and vectorization methods; array processors, multiprocessor architectures and programming; dataflow computers.

Prerequisite: CSCE 350/ECEN 350/ECEN 350/CSCE 350.

CSCE 616 Introduction to Hardware Design Verification**Credits 3. 3 Lecture Hours.**

Introduction to hardware functional verification; case studies on verification in integrated circuit design; introduction to industry best practices; introduction to logic functional verification.

Prerequisites: CSCE 312 or CSCE 350/ECEN 350, or equivalent in computer architecture; familiarity with C/C++/Verilog/VHDL programming.

CSCE 617 Co-Design of Embedded Systems (CODES)**Credits 3. 3 Lecture Hours.**

Co-design methodologies of hardware-software systems; models of computation (MOC), system specification, co-simulation, synthesis, and verification; hardware-software implementation; core-based systems and interfaces, performance analysis and optimization; system on chip, power aware design.

Prerequisites: CSCE 462 or equivalent, CSCE 410 and graduate classification.

CSCE 619 Networks and Distributed Computing**Credits 3. 3 Lecture Hours.**

Computer network concepts including network architecture, layering, protocols, packet switching and virtual circuits; performance evaluation and design considerations for local area networks; packet distributed networks; satellite networks.

Prerequisite: CSCE 463 or CSCE 612.

CSCE 620/VIZA 670 Computational Geometry**Credits 3. 3 Lecture Hours.**

Design and analysis of algorithms for solving geometrical problems; includes convex hull problems, Voronoi diagrams, range searching and proximity problems.

Prerequisite: CSCE 311.

Cross Listing: VIZA 670/CSCE 620.

CSCE 621 Language, Library, and Program Design Using C++**Credits 3. 3 Lecture Hours.**

Exploration of the interactions among language design, library design, and program design in the context of ISO standard C++ and its proposed extensions; Novel features provided by C++ and the design and programming techniques supported.

Prerequisites: Graduate classification or approval of instructor; understanding of C++ and experience with software development projects helpful; knowledge of at least one programming language in addition to C and C++.

CSCE 622 Generic Programming**Credits 3. 3 Lecture Hours.**

The generic programming approach to design and systematic classification of software components, techniques for achieving correctness, efficiency, and generality of algorithms, data structures, and memory management, methods of structuring a library of generic software components for maximum usability are practiced in a significant design and implementation project.

Prerequisite: CSCE 221.

CSCE 624 Sketch Recognition**Credits 3. 3 Lecture Hours.**

Analysis, implementation, and comparison of sketch recognition algorithms, including feature-based, vision-based, geometrical, timing-based, and path-based recognition algorithms. Methods for combining these recognition methods for greater accuracy, using known AI techniques, are also examined.

Prerequisite: Graduate classification.

CSCE 625 Artificial Intelligence**Credits 3. 3 Lecture Hours.**

Basic concepts and methods of artificial intelligence; Heuristic search procedures for general graphs; game playing strategies; resolution and rule based deduction systems; knowledge representation; reasoning with uncertainty.

Prerequisite: CSCE 221.

CSCE 626 Parallel Algorithm Design and Analysis**Credits 3. 3 Lecture Hours.**

Design of algorithms for use on highly parallel machines; area-time complexity of problems and general lower bound theory; application (of these concepts) to artificial intelligence, computer vision and VLSI design automation.

Prerequisite: CSCE 221.

CSCE 627 Theory of Computability**Credits 3. 3 Lecture Hours.**

Formal models of computation such as pushdown automata; Turing machines and recursive functions; unsolvability results; complexity of solvable results.

Prerequisite: CSCE 433.

CSCE 628/BICH 628 Computational Biology**Credits 3. 3 Lecture Hours.**

Introduction to computational biology; formulations of biology problems as computational problems; computational approaches to solve problems in genomics and proteomics.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: BICH 628/CSCE 628.

CSCE 629 Analysis of Algorithms**Credits 3. 3 Lecture Hours.**

Concrete algorithm design and analysis; abstract models to analyze the complexity of problems; NP-Completeness; approximation and probabilistic algorithms.

Prerequisite: CSCE 411.

CSCE 630 Speech Processing**Credits 3. 3 Lecture Hours.**

Speech production and perception (speech apparatus, articulatory/auditory phonetics); mathematical foundations (sampling, filtering, probability, pattern recognition); speech analysis and coding (short-time Fourier analysis, linear prediction, cepstrum); speech recognition (dynamic time warping, hidden Markov models, language models); speech synthesis (front-end, back-end); speech modification (overlap-add, enhancement, voice conversion).

Prerequisites: ECEN 314 or equivalent or approval of instructor. Basic knowledge of signals and systems, linear algebra, probability and statistics. Programming experience in a high-level language is required.

CSCE 631 Intelligent Agents**Credits 3. 3 Lecture Hours.**

On the design and implementation of Intelligent Agents and coordination mechanisms among multiple agents, ranging from theoretical principles to practical methods for implementation.

Prerequisite: CSCE 420 or CSCE 625.

CSCE 633 Machine Learning**Credits 3. 3 Lecture Hours.**

Machine learning is the study of self-modifying computer systems that can acquire new knowledge and improve their own performance; survey machine learning techniques, which include induction from examples, conceptual clustering, explanation-based learning, exemplar learning and analogy, discovery and genetic algorithms.

Prerequisite: CSCE 420 or CSCE 625.

CSCE 634 Intelligent User Interfaces**Credits 3. 3 Lecture Hours.**

Intersection of artificial intelligence and computer-human interaction; emphasis on designing and evaluating systems that learn about and adapt to their users, tasks, and environments.

Prerequisites: Graduate classification and approval of instructor.

CSCE 635 AI Robotics**Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Introduction and survey of artificial intelligence methods for mobile robots (ground, aerial, or marine) for science and engineering majors; theory and practice of unmanned systems, focusing on biological and cognitive principles which differ from control theory formulations.

CSCE 636 Deep Learning**Credits 3. 3 Lecture Hours.**

Basic concepts in neural computing; functional equivalence and convergence properties of neural network models; associative memory models; associative, competitive and adaptive resonance models of adaptation and learning; selective applications of neural networks to vision, speech, motor control and planning; neural network modeling environments.

Prerequisites: MATH 251 and MATH 304 or approval of instructor.

CSCE 637 Complexity Theory**Credits 3. 3 Lecture Hours.**

Deterministic, non-deterministic, alternating and probabilistic computations; reducibilities; P, NP and other complexity classes; abstract complexity; time, space and parallel complexity; and relativized computation.

Prerequisite: CSCE 627 or approval of instructor.

CSCE 638 Natural Language Processing: Foundations and Techniques**Credits 3. 3 Lecture Hours.**

Focus on teaching Natural Language Processing (NLP) fundamentals including language models, automatic syntactic processing and semantic understanding; introduction to major NLP applications including information extraction, machine translation, text summarization, dialogue systems and sentiment analysis.

CSCE 639 Fuzzy Logic and Intelligent Systems**Credits 3. 3 Lecture Hours.**

Introduces the basics of fuzzy logic and its role in developing intelligent systems; topics include fuzzy set theory, fuzzy rule inference, fuzzy logic in control, fuzzy pattern recognition, neural fuzzy systems and fuzzy model identification using genetic algorithms.

Prerequisite: CSCE 625 or approval of instructor.

CSCE 640 Quantum Algorithms**Credits 3. 3 Lecture Hours.**

Introduction to the design and analysis of quantum algorithms; basic principles of the quantum circuit model; gives a gentle introduction to basic quantum algorithms; reviews recent results in quantum information processing.

Prerequisite: CSCE 629 or approval of instructor.

CSCE 641/VIZA 672 Computer Graphics**Credits 3. 3 Lecture Hours.**

Representations of 3-dimensional objects, including polyhedral objects, curved surfaces, volumetric representations and CSG models; techniques for hidden surface/edge removal and volume rendering; illumination and shading; anti-aliasing; ray tracing; radiosity; animation; practical experience with state-of-the-art graphics hardware and software.

Prerequisite: CSCE 441.

Cross Listing: VIZA 672/CSCE 641.

CSCE 643 Seminar in Intelligent Systems and Robotics**Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in intelligent systems and robotics. May be taken at multiple times for credit as content varies.

Prerequisite: Approval of instructor.

CSCE 644 Cortical Networks**Credits 3. 3 Lecture Hours.**

The architecture of the mammalian cerebral cortex; its modular organization and its network for distributed and parallel processing; cortical networks in perception and memory; neuronal microstructure and dynamical simulation of cortical networks; the cortical network as a proven paradigm for the design of cognitive machines.

Prerequisites: CSCE 420 or CSCE 625 and CSCE 636 and graduate classification.

CSCE 645/VIZA 675 Geometric Modeling**Credits 3. 3 Lecture Hours.**

Geometric and solid modeling concepts. Freeform curves and surfaces (splines and Bezier) with their relational, intersectional and global mathematical properties. Parametric representation of solids, topology of closed curved surfaces, boundary concepts and Boolean/Euler operators. Construction and display of curves and surfaces, and solid models.

Prerequisites: CSCE 441 and CSCE 442 or equivalent.

Cross Listing: VIZA 675/CSCE 645.

CSCE 646/VIZA 654 The Digital Image**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Tools and techniques for generation, handling and analysis of two dimensional digital images; image representation and storage; display, media conversion, painting and drawing; warping; color space operations, enhancement, filtering and manipulation.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: VIZA 654/CSCE 646.

CSCE 647/VIZA 656 Image Synthesis**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Principles of image synthesis from 3-D scene descriptions; includes local and global illumination, shading, shadow determination, hidden surface elimination, texturing, raster graphics algorithms, transformations and projects.

Prerequisite: Approval of instructor.

Cross Listing: VIZA 656/CSCE 647.

CSCE 648/VIZA 657 Computer Aided Sculpting**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Mathematical and artistic principles of 3-D modeling and sculpting; includes proportions, skeletal foundation, expression and posture, line of action; curves, surfaces and volumes, interpolation and approximation, parametric and rational parametric polynomials, constructive solid geometry, and implicit representations.

Prerequisite: Approval of instructor.

Cross Listing: VIZA 657/CSCE 648.

CSCE 649/VIZA 659 Physically-Based Modeling**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Physical simulation as used in choreography, geometric modeling, and the creation of special effects in computer graphics including a variety of problems and techniques explored which may include particle-methods, modeling and simulation of flexible materials, kinematics and constraint systems.

Prerequisite: Approval of instructor.

Cross Listing: VIZA 659/CSCE 649.

CSCE 650/VIZA 677 Virtual Reality**Credits 3. 3 Lecture Hours.**

Theory and practice of virtual reality (VR); interactive 3D virtual environments, immersive technology, perceptual realism, and embodied interaction experience; overview of VR with topics including input devices, output devices, 3D interaction techniques, augmented reality, the role of realism in VR, navigation techniques, design guidelines, and evaluation methods; hands-on experience designing VR experiences emphasizing application, demonstration, or research purposes.

Cross Listing: VIZA 677/CSCE 650.**CSCE 652 Software Reverse Engineering****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Introduction to the compilation mechanism to generate executable files and raw binary codes from source codes; the executable file formats for an operation system to run the binary code; disassembly algorithms and control graph analysis; static and dynamic analyses; case studies on code obfuscation, codebreaking and malware analysis.

Prerequisites: CSCE 313 or approval of instructor.**CSCE 653 Computer Methods in Applied Sciences****Credits 3. 3 Lecture Hours.**

Classical and modern techniques for the computational solution of problems of the type that traditionally arise in the natural sciences and engineering; introductions to number representation and errors, locating roots of equations, interpolation, numerical integration, linear algebraic systems, spline approximations, initial-value problems for ordinary differential equations and finite-difference methods for partial differential equations.

Prerequisite: CSCE 442 or MATH 417; graduate classification.**CSCE 654 Supercomputing****Credits 3. 3 Lecture Hours.**

Principles of high-performance scientific computing systems, vectorization, programming on supercomputers, numerical methods for supercomputers, performance measuring of supercomputers, multitasking.

Prerequisite: CSCE 614.**CSCE 655 Human-Centered Computing****Credits 3. 3 Lecture Hours.**

A foundation course in human centered systems and information; understanding and conceptualizing interaction; design and prototyping methodologies; evaluation frameworks; visual design using color, space, layering, and media; information structuring and visualization; animation and games; individual and team programming projects.

Prerequisite: Graduate classification or CSCE 436 or 444 or approval of instructor.**CSCE 656 Computers and New Media****Credits 3. 3 Lecture Hours.**

This class investigates the potential and realized impact of computers in the design of new media, explores the variety of relationships between authors and readers of interactive materials, and explores the influence of media design and content expressed.

Prerequisite: Graduate classification.**CSCE 657/PETE 657 High Performance Computing for Earth Science and Petroleum Engineering****Credits 3. 3 Lecture Hours.**

Numerical simulation of problems in Earth Sciences and Petroleum Engineering using high performance computing (HPC); development of a parallel reservoir simulator.

Prerequisite: Graduate classification.**Cross Listing:** PETE 657/CSCE 657.**CSCE 658 Randomized Algorithms.****Credits 3. 3 Lecture Hours.**

Introduction to randomized algorithms; selected tools and techniques from probability theory and game theory are reviewed, with a view towards algorithmic applications; the main focus is a thorough discussion of the main paradigms, techniques, and tools in the design and analysis of randomized algorithms; a detailed analysis of numerous algorithms illustrates the abstract concepts and techniques.

Prerequisite: Graduate classification.**CSCE 659/ECEN 659 Parallel/Distributed Numerical Algorithms and Applications****Credits 3. 3 Lecture Hours.**

A unified treatment of parallel and distributed numerical algorithms; parallel and distributed computation models, parallel computation of arithmetic expressions; fast algorithms for numerical linear algebra, partial differential equations and nonlinear optimization.

Prerequisites: CSCE 653; MATH 304.**Cross Listing:** ECEN 659/CSCE 659.**CSCE 660/MATH 660 Computational Linear Algebra****Credits 3. 3 Lecture Hours.**

Techniques in matrix computation including elimination methods, matrix decomposition, generalized inverses, orthogonalization and least-squares, eigenvalue problems and singular value decomposition, iterative methods and error analysis.

Prerequisite: MATH 417 or equivalent or CSCE 442 or equivalent.**Cross Listing:** MATH 660/CSCE 660.**CSCE 661 Integrated Systems Design Automation****Credits 3. 3 Lecture Hours.**

VLSI design systems and their levels of abstracting; algorithms for general VLSI design and implementation; computer aided design tools and principles; physical and logical models.

Prerequisite: Graduate classification.**CSCE 662 Distributed Processing Systems****Credits 3. 3 Lecture Hours.**

Principles and practices of distributed processing; protocols, remote procedure calls; file sharing; reliable system design; load balancing; distributed database systems; protection and security; implementation.

Prerequisite: CSCE 313 and CSCE 463 or CSCE 612.**CSCE 663 Real-Time Systems****Credits 3. 3 Lecture Hours.**

Taxonomy of real-time computer systems; scheduling algorithms for static and dynamic real-time tasks; hard real-time communications protocols; programming languages and environments for real-time systems; case studies of real-time operating systems.

Prerequisites: CSCE 313, and CSCE 463 or CSCE 611, or approval of instructor.**CSCE 664 Wireless and Mobile Systems****Credits 3. 3 Lecture Hours.**

Wireless and mobile systems; wireless communication fundamentals; wireless medium access control design; transmission scheduling; network and transport protocols over wireless design, simulation and evaluation; wireless capacity; telecommunication systems; vehicular, adhoc, and sensor network systems; wireless security; mobile applications.

Prerequisite: CSCE 463 or CSCE 464 or approval of instructor.

CSCE 665 Advanced Networking and Security**Credits 3. 3 Lecture Hours.**

Security aspects of various network protocols including investigation and tool development using "live" machines and networks.

Prerequisites: Graduate classification and approval of instructor.

CSCE 666 Pattern Analysis**Credits 3. 3 Lecture Hours.**

Introduction to methods for the analysis, classification and clustering of high dimensional data in Computer Science applications. Course contents include density and parameter estimation, linear feature extraction, feature subset selection, clustering, Bayesian and geometric classifiers, non-linear dimensionality reduction methods from statistical learning theory and spectral graph theory, Hidden Markov models, and ensemble learning.

Prerequisites: MATH 222, MATH 411 (or equivalent) and graduate classification.

CSCE 667 Seminar in Human-Centered Computing**Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in human-centered computing and information. May be repeated for credit as content varies.

Prerequisites: Graduate classification.

CSCE 668 Distributed Algorithms and Systems**Credits 3. 3 Lecture Hours.**

Introduction to fundamental algorithmic results in distributed computing systems; leader election, mutual exclusion, consensus, logical time and causality, distributed snapshots, algorithmic fault tolerance, shared memory, clock synchronization.

Prerequisites: CSCE 411 or equivalent or approval of instructor.

CSCE 669 Computational Optimization**Credits 3. 3 Lecture Hours.**

Combinatorial theory of polytopes as a tool for the solution of combinatorial optimization problems; applications to max flow, matching and matroids; geometric interpretation of the results indicating the profound role that polyhedral combinatorics play in the design and complexity of approximation algorithms.

Prerequisite: CSCE 629.

CSCE 670 Information Storage and Retrieval**Credits 3. 3 Lecture Hours.**

Representation, storage, and access to very large multimedia document collections; fundamental data structures and algorithms of information storage and retrieval systems; techniques to design and evaluate complete retrieval systems, including cover of algorithms for indexing, compressing, and querying very large collections.

Prerequisites: CSCE 310 or CSCE 603 or approval of instructor; graduate classification.

CSCE 671 Computer-Human Interaction**Credits 3. 3 Lecture Hours.**

Comprehensive coverage of Computer-human Interaction (CHI) including history, importance, design theories and future direction; modeling computer users and interfaces, empirical techniques for task analysis and interface design, and styles of interaction.

Prerequisite: Graduate classification.

CSCE 672 Computer Supported Collaborative Work**Credits 3. 3 Lecture Hours.**

Covers design, implementation and use of technical systems that support people working cooperatively; draws from the research area of Computer Supported Cooperative Work (CSCW) and includes current theoretical, practical, technical and social issues in CSCW and future directions of the field.

Prerequisite: CSCE 671 or CSCE 610 or approval of instructor.

CSCE 675 Digital Libraries**Credits 3. 3 Lecture Hours.**

Surveys current research and practice in Digital Libraries, which seek to provide intellectual access to large-scale, distributed digital information repositories; current readings from the research literature which covers the breadth of this interdisciplinary area of study.

Prerequisite: Graduate classification in computer science.

CSCE 676 Data Mining and Analysis**Credits 3. 3 Lecture Hours.**

Broad overview of data mining, integrating related concepts from machine learning and statistics; exploratory data analysis, pattern mining, clustering and classification; applications to scientific and online data.

Cross Listing: ECEN 758 and STAT 639.

CSCE 678/ECEN 757 Distributed Systems and Cloud Computing**Credits 3. 3 Lecture Hours.**

Fundamental concepts of distributed systems with a focus on the emerging application of cloud computing; design, analyze, and optimize distributed systems; includes MapReduce, synchronization, peer-to-peer systems, election, distributed agreement, replication, job assignment.

Cross Listing: ECEN 757/CSCE 678.

CSCE 679/VIZA 676 Data Visualization**Credits 3. 3 Lecture Hours.**

Foundation principles of data visualization and hands-on experience in design and evaluation; includes abstract data visualization, 3D visualization, infographics, data narratives, principles of visual data encoding and interaction techniques.

Cross Listing: VIZA 676/CSCE 679.

CSCE 680/ECEN 680 Testing and Diagnosis of Digital Systems**Credits 3. 3 Lecture Hours.**

The theory and techniques of testing VLSI-based circuits and systems, and design for testability.

Prerequisites: CSCE 321 or ECEN 350/CSCE 350 or equivalent; ECEN 220 or ECEN 248 or equivalent.

Cross Listing: ECEN 680/CSCE 680.

CSCE 681 Seminar**Credits 0-1. 0-1 Other Hours.**

Reports and discussion of current research and of selected published technical articles. May not be taken for credit more than once in master's degree program nor twice in PhD program.

CSCE 684 Professional Internship**Credits 1 to 16. 1 to 16 Other Hours.**

Training under the supervision of practicing computer professionals in settings appropriate to the student's professional objectives, away from the Texas A&M University campus.

Prerequisites: Approval of department head and one semester of graduate work completed.

CSCE 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Research problems of limited scope designed primarily to develop research technique.

CSCE 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of computer science. May be repeated for credit.

Prerequisite: Approval of instructor.**CSCE 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

CSCE 701/CYBR 601 Foundations of Cybersecurity**Credits 3. 3 Lecture Hours.**

Foundational concepts and principles of cybersecurity; cryptographic algorithms; hash functions; introduction to cyber-physical systems security; authentication, firewalls, and intrusion detection systems; social constructs and domains of cybersecurity.

Prerequisites: Graduate classification or approval of instructor.**Cross Listing:** CYBR 601/CSCE 701.**CSCE 702/CYBR 602 Law and Policy in Cybersecurity****Credits 3. 3 Lecture Hours.**

Law and policy issues related to cybersecurity including procurement, operations, maintenance, governance, oversight, protection, defense; analyze law, policies, and regulations domestically and globally.

Prerequisite: Graduate classification.**Cross Listing:** CYBR 602/CSCE 702.**CSCE 703/CYBR 603 Cybersecurity Risk****Credits 3. 3 Lecture Hours.**

Risks in cybersecurity; avoidance, acceptance, mitigation or transference strategies; developing reliable cybersecurity risk assessments to include analysis, categorization and evaluation; cybersecurity risk audit frameworks.

Cross Listing: CYBR 603/CSCE 703.**CSCE 704/CYBR 604 Data Analytics for Cybersecurity****Credits 3. 3 Lecture Hours.**

Introduction to the theoretical foundations, algorithms and methods of data analytics for cybersecurity; societally-critical topic with impacts across computing systems and networks, social and web-based communities, industrial control systems and personal devices, among many others; study and application of data analytics including cluster analysis, supervised machine learning, anomaly detection and visualization; addresses a suite of cybersecurity topics including cyber attacks, anomaly detection, vulnerability analysis, strategic manipulation and propaganda.

Prerequisites: Graduate classification.**Cross Listing:** CYBR 604/CSCE 704.**CSCE 705 Introduction to Computing Systems****Credits 3. 3 Lecture Hours.**

Principles of basic computer systems; motivation, challenges and design issues in modern operating systems; synchronous and asynchronous event handling; principles of high-performance design in software and hardware, e.g., caching, multi-programming and virtual memory; software efficiency using concurrency, scheduling, concurrency and synchronization; persistent storage; I/O mechanism; network programming; network and software security and vulnerabilities; some advanced topics relating to security and modern networks; experience with programming in at least one of the following languages C/C++, Java or Python.

Prerequisites: Graduate classification.**CSCE 710 Fundamentals of Software Analysis****Credits 3. 3 Lecture Hours.**

Development of advanced concepts in program analyses; program abstraction, data-flow analysis, type systems, verification, testing, concurrency, reliability, fault detection; tools and empirical experimentation for program analyses.

Prerequisites: CSCE 434 or approval of instructor.**CSCE 712 Digital Forensic Engineering****Credits 3. 3 Lecture Hours.**

Fundamentals and hands-on practice of computer and network forensics; exposure to technical principles, digital forensic tools and legal requirements on handling of digital information undergoing digital forensic analysis.

Prerequisites: Graduate classification.**CSCE 713 Software Security****Credits 3. 3 Lecture Hours.**

Basic principles of design and implementation of secure software, code reviews including tool-assisted review by static and dynamic analysis, risk analysis and management, and methods for software security testing.

Prerequisites: CSCE 431 or CSCE 606 or approval of instructor; graduate classification.

CVEN - Civil Engineering

CVEN 601 Environmental Engineering Processes III**Credits 3. 3 Lecture Hours.**

Biological processes that describe behavior of materials in natural and engineered environmental systems including fundamental theory of kinetics, bioenergetics, genetics and cellular functions.

Prerequisites: CVEN 301/EVEN 301.**CVEN 602 Remote Sensing in Hydrology****Credits 3. 3 Lecture Hours.**

Precipitation; evaporation; soil moisture; snow and ice; terrestrial water storage variations; land surface properties; water quality.

CVEN 603 Environmental Engineering Management**Credits 3. 3 Lecture Hours.**

Federal and state regulatory framework for environmental engineering; techniques for environmental control; risk assessment; evaluation of critical environmental problems with multimedia aspects.

Prerequisite: CVEN 301/EVEN 301 or approval of instructor.

CVEN 604 Engineering Analysis of Treatment Systems**Credits 3. 3 Lecture Hours.**

Theory of processes used to treat water and wastewater; applications of theory to design and operation of treatment systems, including adsorption, coagulation (including precipitation), flocculation, media filtration and membrane filtration.

Prerequisites: CVEN 619 and CVEN 620.**CVEN 605 Environmental Measurement****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Theory and practice of analytical methods used in the environmental engineering field; instrumental and wet chemical techniques used in measurement of environmental quality parameters and pollutants.

Prerequisite: CVEN 620 or approval of instructor.**CVEN 606 Environmental Engineering Design****Credits 3. 3 Lecture Hours.**

Design of engineered environmental systems for water or wastewater treatment in domestic or industrial applications.

Prerequisite: CVEN 604 or approval of instructor.**CVEN 607 Engineering Aspects of Air Quality****Credits 3. 3 Lecture Hours.**

Characterization of air contaminants; health effects and legal aspects; dispersion of pollutants in the atmosphere; technology for the control of gaseous and particulate emissions.

Prerequisite: CVEN 311/EVEN 311.**CVEN 609 Environmental Control of Oil and Hazardous Materials****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Oil and hazardous material (OHM) spills in the engineering design process; evaluation of OHM properties and their behavior and impact to environmental systems; prevention programs and documents, technology for spill containment and removal; contingency planning cycle including administrative site-specific plans and resource acquisition; response organization; restoration and documentation.

Prerequisite: CVEN 301/EVEN 301 or approval of instructor.**CVEN 610/PHEO 650 Environmental Risk Assessment****Credits 3. 3 Lecture Hours.**

Risk assessment of the environment and human exposure in a statistically-based approach to determine allowable levels of exposure without significant deleterious effects; the basic approach of hazard identification; data collection and analysis; toxicity assessment; risk characterization; applications in ecological and human risk assessment; risk analysis performed.

Prerequisite: CHEM 222 or equivalent.**Cross Listing:** PHEO 650.**CVEN 612 Tools for Highway Materials and Pavement Design****Credits 3. 3 Lecture Hours.**

Theory and practice in pavement design; pavement performance; structural design of pavement layers; types of materials used in pavement layers; characterization of pavement layer materials; concepts of pavement management; hands-on application of pavement design computational tools.

Prerequisite: Graduate classification in civil engineering or approval of instructor.**CVEN 613 Micromechanics of Civil Engineering Materials****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Discrete-particle and continuum micromechanics energy principles; finite-element and discrete-element formulations for constitutive modeling of asphalt, concrete, and coarse and fine-grained soils; adhesive and cohesive fracture and healing; stress-dependent plasticity; principles and measurement of surface energy and pseudo-strain.

Prerequisite: CVEN 615, CVEN 616 or approval of instructor.**CVEN 614 Stabilization of Soil-Aggregate Systems****Credits 3. 3 Lecture Hours.**

Theory and practice of chemical stabilization of soils and aggregate systems with traditional methods of chemical stabilization including Portland cement, lime, fly ash and by products (kiln dusts, fly ash and slag materials); selected non-traditional methods including polymers, ionic systems, and enzymes; mechanisms and methods to avoid deleterious reactions.

CVEN 615 Structural Design of Pavements**Credits 3. 3 Lecture Hours.**

Characteristics of pavement loads, stress analysis in pavements, design practices, construction, rehabilitation and maintenance.

Prerequisite: CVEN 418.**CVEN 616 Systems Design of Pavements****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Optimization of the design of rigid and flexible pavement systems; empirical and mechanistic stochastic structural subsystems; utility theory, serviceability concept, cost studies, traffic delay, environmental deterioration, rehabilitation and maintenance optimization systems.

Prerequisite: CVEN 418.**CVEN 617 Traffic Engineering: Characteristics****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Human, vehicular and traffic characteristics as they relate to driver-vehicle-roadway operational systems; traffic studies and methods of analysis and evaluation.

Prerequisite: CVEN 457 or equivalent.**CVEN 618 Traffic Engineering: Operations****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Advanced theory and application of traffic control; signalization and freeway operations.

Prerequisite: CVEN 457 or equivalent.**CVEN 619 Environmental Engineering Processes I****Credits 3. 3 Lecture Hours.**

Physical processes that describe behavior of materials in natural and engineered environmental systems including transport phenomenon, sorption, desorption, flocculation and sedimentation.

Prerequisite: CVEN 301/EVEN 301.**CVEN 620 Environmental Engineering Processes II****Credits 3. 3 Lecture Hours.**

Chemical processes that describe behavior of materials in natural and engineered environmental systems including neutralization, precipitation, complex formation, adsorption, oxidation-reduction, coagulation, volatilization and absorption.

Prerequisites: CVEN 301/EVEN 301.**CVEN 621 Advanced Reinforced Concrete Design****Credits 3. 3 Lecture Hours.**

Reinforced concrete principles; analysis of rigid building frames, design of building frames, slabs, biaxially loaded columns, rectangular and circular tanks, and deep beams.

Prerequisite: CVEN 444 or equivalent.

CVEN 622 Properties of Concrete**Credits 3. 3 Lecture Hours.**

Materials, properties and behavior of concrete; cement, cement types, aggregate characteristics; properties of fresh concrete; structure of portland cement paste; mechanical properties of hardened concrete; durability and repair of concrete structures.

Prerequisites: CVEN 342.**CVEN 623 Nondestructive Pavement Evaluation****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Nondestructive measurements and analysis methods of pavement data collection to determine riding quality, vehicle dynamics, surface texture, layer thickness, stiffness, moisture and distress using seismic, laser, radar, infrared, impulse, image analysis, and wave propagation. Content applies to construction quality control and evaluation of risk, reliability and remaining life of pavements.

Prerequisite: CVEN 616 or approval of instructor.**CVEN 624 Infrastructure Engineering and Management****Credits 3. 3 Lecture Hours.**

Defines the infrastructure deterioration problems in the United States and describes the engineering and management approaches to arrest the deterioration.

Prerequisite: Graduate classification in engineering or approval of instructor.**CVEN 625 Traffic Engineering: Design****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Design of traffic control device installations with special emphasis on traffic signal design and installation, including the design features of detector placement and operation; national and state design standards and guidelines for traffic control device installation.

Prerequisite: CVEN 457.**CVEN 626 Highway Safety****Credits 3. 3 Lecture Hours.**

Fundamental concepts for performing traffic safety analyses; crash data collection and database management; safety improvement programs; accident data analysis; development of statistical models; before-after studies; economic analyses; accident risk.

CVEN 627 Engineering Surface Water Hydrology**Credits 3. 3 Lecture Hours.**

Precipitation-runoff processes; watershed and streamflow modeling; frequency analysis; erosion and sedimentation engineering; hydrologic design of hydraulic structures and nonstructural stormwater management strategies.

Prerequisite: Graduate classification in engineering or approval of instructor.**CVEN 628 Advanced Hydraulic Engineering****Credits 3. 3 Lecture Hours.**

Modeling of steady and unsteady flow in natural and constructed channels and hydraulic structures. Open channel hydraulics. Design and analysis of hydraulic structures, canals, and flood mitigation projects. Sediment and contaminant transport in river systems.

Prerequisite: CVEN 339 or approval of instructor.**CVEN 631 System Identification and Nondestructive Damage Evaluation of Civil Engineering Structures****Credits 3. 3 Lecture Hours.**

Invasive assessment of civil structures; concepts of systems identification, damage detection, and safety evaluation; estimation of mass, damping, and stiffness properties; determination of load capacity and useful life.

Prerequisite: Graduate classification in Civil Engineering, Aerospace Engineering or Mechanical Engineering.**CVEN 632 Transportation Engineering: Economics****Credits 3. 3 Lecture Hours.**

Engineering and economic principles for transportation systems; engineering evaluation using methods of travel demand, costs, equilibrium and pricing; use of economic principles for the finance, engineering and management of transportation systems.

Prerequisite: CVEN 672 or approval of instructor.**CVEN 633 Advanced Mechanics of Materials****Credits 3. 3 Lecture Hours.**

Stresses and strains at a point, torsion of noncircular cross sections, beams with combined axial and lateral loads, energy methods, thick walled pressure vessels, theories of failure, introduction to the theory of elasticity, theory of plates, theory of elastic stability and solution to elementary problems.

Prerequisite: MATH 308 or approval of instructor.**CVEN 635 Street and Highway Design****Credits 3. 3 Lecture Hours.**

Advanced concepts of the design of streets and highways, design criteria, controls and standards for design alignment, cross section, intersections and interchanges and environmental impacts of surface transport facilities.

Prerequisite: CVEN 456 or equivalent.**CVEN 637 Rigid Pavement Analysis and Design****Credits 3. 3 Lecture Hours.**

Introduction to mechanistic rigid pavement design concepts; development of mathematical pavement models and application of the models to design analysis; relationship of pavement response to performance and fatigue damage concepts in design; evaluation of pavement design practice and procedures for highways and airports; rigid pavement overlay design concept.

Prerequisite: CVEN 418.**CVEN 638 Computer Integrated Construction Engineering Systems****Credits 3. 3 Lecture Hours.**

Modeling concepts, issues and techniques of computer integrated construction engineering systems; current research and practice in design and implementation of computer integrated construction systems, with emphasis on the integration of engineering, construction planning, monitoring and control through management information systems, decision support systems, knowledge based systems and discrete event simulation systems.

Prerequisite: CVEN 349.**CVEN 639 Methods Improvement for Construction Engineers****Credits 3. 3 Lecture Hours.**

Application of work methods and measurements to civil engineering construction; examination of factors that affect productivity in construction; study of motivational factors; review of the principles of accident prevention.

Prerequisites: CVEN 405 and CVEN 473 or approval of instructor.

CVEN 640 Project Development: Methods and Models**Credits 3. 3 Lecture Hours.**

Development of new projects; public-private partnerships; flexible design and stage-based construction; project risk analysis and management; estimating and budgeting; optimal project decisions; advanced techniques for modeling project performance.

Prerequisite: STAT 601 or approval of instructor.

CVEN 641 Construction Engineering Systems**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Application of systems theory to project planning and control; probabilistic network diagramming, resource allocation, statistical bidding analysis, activity planning, financial management of construction projects and project control.

Prerequisite: CVEN 473 or approval of instructor.

CVEN 642/BAEN 642 Water-Energy-Food Nexus: Toward a Sustainable Resource Management**Credits 3. 3 Lecture Hours.**

Principles and application of the Water-Energy-Food nexus to state, national and international Water-Energy-Food securities and the interlinkages between them; exploration of quantitative framework to develop and assess sustainable tradeoffs of resources; hands on experiences; relevant real world projects or case studies.

Prerequisites: Strong analytical background; approval of instructor.

Cross Listing: BAEN 642/CVEN 642.

CVEN 644 Project Risk Management**Credits 3. 3 Lecture Hours.**

Identifies causes of risks in projects; discusses probabilistic description of risks and formulation of risk models; Bayesian methods for revising probabilities; qualitative and quantitative risk assessment; setting contingencies on budgets and schedules; risk mitigation and risk management; handling technological risk; Utility theory and game theory in management of risks.

Prerequisites: ISEN 644/CVEN 644; STAT 211, STAT 601 or equivalent.

CVEN 645 Geotechnical Site Investigation**Credits 2. 2 Lecture Hours.**

Soil sampling techniques to obtain disturbed and undisturbed samples; in situ field tests including standard penetration test, cone penetration test, vane test, pressuremeter test and their use in practice; other recent advances in sampling, in situ testing and site investigation both onshore and offshore.

Prerequisites: CVEN 365; CVEN 435 or equivalent.

CVEN 646 Foundations on Expansive Soils**Credits 3. 3 Lecture Hours.**

Properties of partially saturated soils, analysis of beams and plates on foundations, slab-subgrade friction, design of slabs and drilled piers, soil improvement techniques, risk analysis and foundation rehabilitation operations.

Prerequisites: CVEN 365 and MATH 308 or approval of instructor.

CVEN 647 Numerical Methods in Geotechnical Engineering**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Formulation and application of finite element and discrete element methods in solving geotechnical engineering problems related to seepage, diffusion, elasticity, plasticity, fracture and dynamic motion of soil masses, stability and convergence problems and use of existing computer programs in working applied problems.

Prerequisite: Degree in engineering or approval of instructor.

CVEN 648 Advanced Numerical Methods in Geotechnical Engineering**Credits 3. 3 Lecture Hours.**

Formulation and application of finite difference and finite element methods in geotechnical problems related to elasticity, plasticity, seepage, consolidation, dynamic response, and pile analysis; constitutive models of soil behavior; and analysis of nonlinear systems.

Prerequisites: MEMA 646 or equivalent; CVEN 651 or registration therein.

CVEN 649 Physical and Engineering Properties of Soil**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Introduction to physico-chemical properties of soils; soil structure; soil classification; permeability; principle of effective stress; stress-deformation and strength characteristics; partly saturated soils; testing procedures.

Prerequisites: CVEN 365 and CVEN 435 or approval of instructor.

CVEN 650 Stochastic Mechanics**Credits 3. 3 Lecture Hours.**

Introduction to the use of Bayesian inference methods to solve mechanical inverse problems with varying evidence conditions; experimental observations, model complexity and expert beliefs; representation of the probabilistic calibration of models with varying parameters in space and time, in the form of boundary conditions, material properties, and even numerical parameters; improves the scientific and engineering inferences stemmed from research practice.

Prerequisite: STAT 201.

CVEN 651 Geomechanics**Credits 3. 3 Lecture Hours.**

Fundamentals of mechanics of deformable bodies; theory and application of elasticity, plasticity, viscoelasticity and approximate rheological models to soil mechanics problems.

Prerequisite: Approval of instructor.

CVEN 652 Soil Dynamics**Credits 3. 3 Lecture Hours.**

Dynamic properties of soil; wave propagation in an elastic medium; analysis of dynamic soil-structure interaction and machine foundations; earthquake engineering; soil liquefaction; seismic design of foundations, dams, retaining walls and pipelines.

Prerequisite: MATH 308.

CVEN 653 Bituminous Materials**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Production, specifications and tests of bituminous materials; design and evaluation of asphaltic concrete for construction and maintenance; inspection control of street, parking and highway paving surfaces.

Prerequisite: Approval of instructor.

CVEN 654/ISEN 643 Strategic Construction and Engineering Management**Credits 3. 3 Lecture Hours.**

Strategic and systems perspectives applied to construction and engineering management projects, organizations and industries; system dynamics methodology to model construction and engineering systems; understanding drivers of performance; feedback and high leverage points for performance improvement.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: ISEN 643/CVEN 654.

CVEN 655 Structural Reliability**Credits 3. 3 Lecture Hours.**

Uncertainties in structural mechanics; probabilistic models for load and resistance variables, fundamentals of structural reliability theory, advanced first-order second moment methods and reliability of complex structural systems; applications to selected structures.

Prerequisites: CVEN 345 and CVEN 421.

CVEN 656 Bridge Engineering**Credits 3. 3 Lecture Hours.**

Overview of design of highway bridges, and an introduction to maintenance of highway bridges; history of bridge engineering, types of bridges and materials of construction, design rules, loads, inspection, rating and preventive maintenance, esthetics.

Prerequisite: CVEN 345.

CVEN 657 Dynamic Loads and Structural Behavior**Credits 3. 3 Lecture Hours.**

Dynamic modeling of single, multidegree of freedom and continuous systems; dynamic load factors; damping; mode superpositions; numerical integration; dynamic behavior of structures and structural elements under action of dynamic loads resulting from wind, earthquake, blast, impact, moving loads and machinery.

Prerequisites: MATH 308 and MEMA 467 or approval of instructor.

CVEN 658 Civil Engineering Applications of GIS**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Use of geographic information system (GIS) concepts and methods to solve civil engineering problems; emphasis on different areas of civil engineering. Class presentations and laboratory sessions used to familiarize students with computer software.

Prerequisite: Graduate classification.

CVEN 659 Behavior and Design of Steel Structures**Credits 3. 3 Lecture Hours.**

Buckling and post-buckling strength of stiffened and unstiffened plate elements and members; torsional behavior and design of beams; stability of frames; frames subject to sidesway; bracing design; non-destructive evaluation and application of fracture mechanics principles to welded structures.

Prerequisite: 3 credit hours of structural steel design or approval of instructor.

CVEN 662 Experimental Methods in Civil Engineering**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Introduction to experimental methods, instrumentation, data acquisition and data processing; experimental aspects of static and dynamic testing in the various areas of civil engineering; overview of laboratory work with several hands-on applications in the laboratory.

Prerequisite: Graduate classification in engineering.

CVEN 663 Structural Stability**Credits 3. 3 Lecture Hours.**

Buckling of columns, frames, arches, rings, plates and shells, lateral and torsional buckling of beams, Newmark's method, equilibrium method, Rayleigh-Ritz, variational principles; Galerkin method, Trefftz method, review of current literature.

Prerequisites: MATH 308; approval of instructor.

CVEN 664 Water Resources Engineering Planning and Management**Credits 3. 3 Lecture Hours.**

Managing water resources; the planning process, systems analysis methods; institutional framework for water resources engineering; comprehensive integration of engineering, economic, environmental, legal and political considerations in water resources development and management.

Prerequisite: Graduate classification in engineering or approval of instructor.

CVEN 665 Water Resources Systems Engineering**Credits 3. 3 Lecture Hours.**

Linear and non-linear optimization models and simulation models for planning and management of water systems; single- and multi-objective analysis and deterministic and stochastic techniques.

Prerequisites: CVEN 339; CVEN 422 or equivalent.

CVEN 666 Foundation Structures**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Geological and soil mechanics principles including load bearing capacity, soil pressure and settlement; design of shallow foundation sub-structures including pedestals, spread footings, combined footings, mats and underream footings; design of deep foundations including piles and drilled piers; retaining walls, cofferdams and sheet piles.

CVEN 667 Slope Stability and Retaining Walls**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Slope stability; failure analysis including methods of slices; risk analysis; earthquake analysis; monitoring; remedial measures; retaining structures; basic theories; gravity walls; cantilever walls; tieback walls; mechanically stabilized walls; soil nailing; deflecting-based analysis.

Prerequisites: CVEN 365 or equivalent; graduate classification.

CVEN 668 Advanced EPC Project Development**Credits 3. 3 Lecture Hours.**

Examines the advanced project development process-business planning and pre-project planning for engineering, procurement and construction (EPC); a process approach is followed. Issues covered are project technical and economic feasibility; scope definition; project risks; preliminary budgeting; scheduling and parametric estimating; execution strategies; negotiations; organizational design and development.

Prerequisite: Graduate classification in engineering or approval of instructor.

CVEN 669 Design of Structures for Hazardous Environmental Loads**Credits 3. 3 Lecture Hours.**

Introduction to wind and earthquake engineering with focus on studying the characteristics and effects of various types of windstorms and earthquakes; development of tools that can be used in specifying wind and earthquake loads on structures.

Prerequisite: Approval of instructor.

CVEN 670 Behavior and Design of Composite Structures**Credits 3. 3 Lecture Hours.**

Design of composite structural systems comprising structural steel and reinforced concrete; composite slabs on steel beams; composite slabs on formed metal deck; columns; moment frame systems; shear wall systems; braced frame systems; dual systems; introduction to retrofitting applications.

Prerequisites: CVEN 444; CVEN 446 or equivalent; graduate classification.

CVEN 671 Behavior and Design of Prestressed Concrete Structures
Credits 3. 3 Lecture Hours.

Introduction to the behavior and design of prestressed concrete structural members for several limit states; including flexure, shear, torsion and deflection; exposure to composite beams; indeterminate systems; bridge design and construction.

Prerequisites: CVEN 444; graduate classification in civil engineering or approval of instructor.

CVEN 672 Engineering and Urban Transportation Systems
Credits 3. 3 Lecture Hours.

Characteristics of transportation engineering systems; transportation engineering data collection; modeling effects of engineering project planning, trip generation, trip distribution, mode choice and traffic assignment; use and interpretation of engineering modeling results; engineering project analysis.

Prerequisite: Graduate classification in engineering or urban and regional planning or approval of instructor.

CVEN 673 Transport Phenomena in Porous Media
Credits 3. 3 Lecture Hours.

Transport phenomena in porous media with special emphasis on fundamentals and applications to various geo-environmental problems.

Prerequisites: CVEN 311/EVEN 311 and MATH 308 or approval of instructor.

CVEN 674 Groundwater Engineering
Credits 3. 3 Lecture Hours.

Advanced groundwater hydrology, groundwater contamination, groundwater modeling, multiple-phase flow, salt water intrusion, artificial recharge, sustainable groundwater management.

Prerequisite: CVEN 462/EVEN 462, GEOL 410, or equivalent; or approval of instructor.

CVEN 675 Stochastic Hydrology
Credits 3. 3 Lecture Hours.

Analysis, simulation and forecasting of hydro-climatic variables.

Prerequisites: CVEN 421 and CVEN 463/EVEN 463 or approval of instructor.

CVEN 679 Experimental Fluid Mechanics Modeling
Credits 3. 3 Lecture Hours.

Dimensional analysis; modeling laws; measurement techniques and instrumentation; experimental control and data acquisition; sampling theory and signal processing; applications to coastal, ocean, and hydraulic engineering models.

Prerequisite: Approval of instructor.

CVEN 680 Advanced Computation Methods for Fluid Flow
Credits 3. 3 Lecture Hours.

Unsteady three-dimensional Navier-Stokes equations in general nonorthogonal curvilinear coordinates; algebraic and elliptic grid generation; turbulence modeling for complex flows; advanced numerical methods for unsteady incompressible turbulent flows; large-eddy simulations; Reynolds-averaged Navier-Stokes simulation; chimera domain decomposition and interactive zonal approach.

Prerequisite: CVEN 688 or approval of instructor.

CVEN 681 Seminar

Credits 0-1. 0-1 Other Hours.

Reports and discussion of current research and selected published technical articles.

CVEN 682 Environmental Remediation of Contaminated Sites
Credits 3. 3 Lecture Hours.

Aspects of characterization and design of plans for remediation of sites contaminated with hazardous wastes; review of federal and state regulations; risk assessment; remedial technology screening and design of remedial plans.

Prerequisites: CVEN 601, CVEN 619, CVEN 620.

CVEN 683 Dynamic Soil Structure Interaction
Credits 3. 3 Lecture Hours.

Introduction to basic concepts of wave propagation; soil dynamics; applications to the design of machine foundations; geotechnical earthquake engineering; soil effects on the characteristics of earthquake motions; liquefaction; dynamic stiffness of foundations; seismic soil structure interaction.

Prerequisite: Graduate classification.

CVEN 684 Professional Internship
Credits 1 to 3. 1 to 3 Other Hours.

Training under the supervision of practicing professional engineers in settings appropriate to the student's professional objectives, away from Texas A&M campus. May be taken three times for credit.

Prerequisites: Approval of the department head and two semesters of graduate work completed.

CVEN 685 Directed Studies
Credits 1 to 12. 1 to 12 Other Hours.

Enables majors in civil engineering to undertake and complete with credit in their particular fields of specialization limited investigations not within their thesis research and not covered by other courses in established curriculum.

CVEN 686 Offshore and Coastal Structures
Credits 3. 3 Lecture Hours.

Fundamental design and analysis techniques; offshore platforms for shallow and deep water, pile supported, gravity based and floating platforms; new design problems faced by offshore industry will be examined by class during the semester.

Prerequisite: Approval of instructor.

CVEN 687 Foundation Engineering
Credits 3. 3 Lecture Hours.

Settlement and bearing capacity analysis of foundations; computer programs used to analyze axially-loaded piles, laterally-loaded piles and sheet-pile walls.

Prerequisites: CVEN 365; approval of instructor.

CVEN 688 Computational Fluid Dynamics
Credits 3. 3 Lecture Hours.

Finite-difference and finite-element methods and basic numerical concepts for the solution of dispersion, propagation and equilibrium problems commonly encountered in real fluid flows; theoretical accuracy analysis techniques.

Prerequisites: Undergraduate course in fluid mechanics; MATH 601 and/or basic course in linear algebra; knowledge of one programming language.

CVEN 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 6 Lab Hours.

Selected topics in an identified area of civil engineering. May be repeated for credit.

Prerequisites: Approval of instructor and department head.

CVEN 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research for thesis or dissertation.

CVEN 695 Frontiers in Civil Engineering Research**Credits 1 to 3. 1 to 3 Lecture Hours.**

The present status of investigative work in a variety of civil engineering fields; content selected based on visiting lecturers of distinguished international recognition in their fields of research.

Prerequisite: Approval of instructor.**CVEN 696 Urban Traffic Facilities****Credits 3. 3 Lecture Hours.**

Driver, vehicle and roadway characteristics related to design and operation of traffic facilities; selection and design of traffic control devices and information systems for streets and highways; accident analysis and tort liability related to traffic engineering.

Prerequisite: Graduate classification.**CVEN 699 Engineering Risk Analysis****Credits 3. 3 Lecture Hours.**

Introduction to applications of probability theory, statistics, and decision analysis to civil engineering problems; emphasis on probabilistic modeling and analysis of civil engineering problems, Bayesian statistics, risk analysis, and decision under uncertainty.

Prerequisite: STAT 211 or approval of instructor.**CVEN 701 Mixing and Transport in Natural Civil Engineering Systems****Credits 3. 3 Lecture Hours.**

Introduction to mass transport in the hydrosphere with application to natural civil engineering systems; Fick's law; advective, reacting, diffusion equation; turbulence; dispersion; classical solutions to the diffusion equation; mixing in rivers, lakes, groundwater, estuaries, and the atmosphere; boundary exchange; outfall design.

Prerequisite: CVEN 311/EVEN 311 or equivalent.**CVEN 710 Civil Engineering Project Finance****Credits 3. 3 Lecture Hours.**

Fundamentals of financing civil engineering projects; Public-Private Partnerships (PPPs); interdependencies between engineering and financing decisions; equity and debt markets; type of debt instruments including loans vs. bonds; risk identification, quantification, and management; engineering due-diligence; pricing risk premium; hedging using civil engineering design strategies.

CVEN 717 Engineering Project Control**Credits 3. 3 Lecture Hours.**

Project controls bridge from information-based to physical-based development processes; includes detailed design, testing of designs, design realization, and preparation of facilities for steady state operations; application of basic project control theories, tools, and methods to development projects.

Prerequisite: Graduate classification in civil engineering or industrial and systems engineering or approval of instructor.**CVEN 740 Advanced Constitutive Behavior of Cementitious Materials****Credits 3. 3 Lecture Hours.**

Advanced multi-scale constitutive behavior of cementitious materials, including composite behavior, elasticity, viscoelasticity, aging, free strains, poromechanical behavior, thermal and moisture strains, and thermal, moisture, and ionic transport; focus on experimental observation and analytical modeling.

Prerequisite: CVEN 343 or CVEN 622 or approval of instructor.**CVEN 741 Tools for Highway Materials and Pavement Design****Credits 3. 3 Lecture Hours.**

Theory and practice in pavement design; pavement performance; structural design of pavement layers; types of materials used in pavement layers; characterization of pavement layer materials; concepts of pavement management; hands-on application of pavement design computational tools.

Prerequisite(s): Graduate classification in civil engineering or approval of instructor.**CVEN 749 Advanced Visualization and Building Information Modeling in Structural Engineering Design****Credit 1. 1 Lecture Hour.**

Graphical communication in the structural engineering design process; introduction to Building Information Modeling (BIM); construction documents and contract drawings in structural engineering applications, data analysis and project visualization.

Prerequisites: Graduate classification.**CVEN 750 Finite Element Applications in Structural Engineering****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Role of the finite element method (FEM) in structural engineering; use of commercial finite element software; application of FEM method for various structural engineering problems; selection of appropriate FEM models; types of elements and mesh sizes; use and interpretation of FEM results.

Prerequisite: CVEN 444, CVEN 445, and CVEN 446; graduate classification in civil engineering or approval of instructor.**CVEN 751 Advanced Dynamics and Control of Civil Engineering Structures****Credits 3. 3 Lecture Hours.**

Laplace transforms; nonlinear dynamics; base isolation; viscous dampers; classical control; state-space formulation; LQR controllers; estimator design; compensator design; advanced control techniques; emphasis on the issues and applications to bridges, buildings and other large civil structures.

Prerequisite(s): CVEN 657, MEMA 647 or equivalent, or approval of instructor.**CVEN 752 Smart Structures****Credits 3. 3 Lecture Hours.**

Fundamentals of smart structures including structural dynamics, damping, sensors, control concepts, smart materials, modeling of smart structures, and signal processing; semi-passive concepts, energy harvesting, semi-active concepts, active vibration control, active noise control, shape adaptation, and structural health monitoring.

Prerequisite: CVEN 363 or equivalent or graduate classification in CVEN or approval of instructor.**CVEN 753/MEMA 634 Damage Mechanics of Solids and Structures****Credits 3. 3 Lecture Hours.**

Damage mechanics; constitutive modeling of damage behavior of materials; application of thermodynamic laws; computational techniques for predicting progressive damage and failure; plasticity; viscoplasticity; viscoelasticity; cohesive zone modeling; fatigue and creep damage; damage in various brittle and ductile materials (e.g., metal, concrete, polymer, ceramic, asphalt, biomaterial, composites).

Prerequisite: CVEN 633 or approval of instructor.**Cross Listing:** MEMA 634/CVEN 753.

CVEN 754 Advanced Structural Design Studio**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Comparative design, construction, and service-life performance analysis of integrated and complex structural systems, including design loads, load paths, and structural detailing requirements; comparison of alternative structural system solutions; investigation into new technologies and structural design and/or construction approaches; examples drawn from bridges, buildings and other large civil structures.

Prerequisites: CVEN 659 or registration therein, CVEN 671 or registration therein, CVEN 750 or registration therein, or approval of instructor.

CVEN 765 Advanced Civil Engineering Systems**Credits 3. 3 Lecture Hours.**

Formulation of decision making problems at different hierarchical levels including strategic, planning and operational; includes application problems in project selection, networks, allocation, routing/scheduling, distribution, and multi-objective; introduction to exact and approximate solving techniques including optimization, heuristics, simulation, and decision analysis; solution interpretation and sensitivity analyses.

Prerequisite: CVEN 322 or approval of instructor.

CVEN 766 Highway Design**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Theory and practice in highway design; highway classification and design criteria, location studies, design of vertical and horizontal alignment, cross section, intersections, environmental factors, and highway drainage elements.

Prerequisites: CVEN 307 or approval of instructor.

CYBR - Cybersecurity

CYBR 601/CSCE 701 Foundations of Cybersecurity**Credits 3. 3 Lecture Hours.**

Foundational concepts and principles of cybersecurity; cryptographic algorithms; hash functions; introduction to cyber-physical systems security; authentication, firewalls, and intrusion detection systems; social constructs and domains of cybersecurity.

Prerequisites: Graduate classification or approval of instructor.

Cross Listing: CSCE 701/CYBR 601.

CYBR 602/CSCE 702 Law and Policy in Cybersecurity**Credits 3. 3 Lecture Hours.**

Law and policy issues related to cybersecurity including procurement, operations, maintenance, governance, oversight, protection, defense; analyze law, policies, and regulations domestically and globally.

Prerequisite: Graduate classification.

Cross Listing: CSCE 702/CYBR 602.

CYBR 603/CSCE 703 Cybersecurity Risk**Credits 3. 3 Lecture Hours.**

Risks in cybersecurity; avoidance, acceptance, mitigation or transference strategies; developing reliable cybersecurity risk assessments to include analysis, categorization and evaluation; cybersecurity risk audit frameworks.

Cross Listing: CSCE 703/CYBR 603.

CYBR 604/CSCE 704 Data Analytics for Cybersecurity**Credits 3. 3 Lecture Hours.**

Introduction to the theoretical foundations, algorithms and methods of data analytics for cybersecurity; societally-critical topic with impacts across computing systems and networks, social and web-based communities, industrial control systems and personal devices, among many others; study and application of data analytics including cluster analysis, supervised machine learning, anomaly detection and visualization; addresses a suite of cybersecurity topics including cyber attacks, anomaly detection, vulnerability analysis, strategic manipulation and propaganda.

Prerequisite: Graduate classification.

Cross Listing: CSCE 704/CYBR 604.

CYBR 630/ECEN 759 Hardware Security**Credits 3. 3 Lecture Hours.**

Cryptography and cryptographic algorithms such as AES, DES and others; techniques to optimize hardware implementation of cryptographic systems; different types of side-channel attacks and countermeasures; supply-chain vulnerabilities including hardware Trojans, counterfeits, IP piracy and reverse engineering; security modules for system-on-chip; physical unclonable functions.

Prerequisites: ECEN 468, ECEN 474, or approval of instructor.

Cross Listing: ECEN 759/CYBR 630.

CYBR 660/INTA 690 Cybersecurity Literacy for the Global Arena**Credits 3. 3 Lecture Hours.**

Research technical literacy in cybersecurity; exploration of cybersecurity in applied settings to include private and public sector; use of cybersecurity literacy to develop policy guidelines; examination of intent of cyber-actors; technical and policy risk-mitigation strategies.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: INTA 690/CYBR 660.

CYBR 661/PSAA 608 Cybersecurity Policy, Issues and Operations - A Manager's Guide**Credits 3. 3 Lecture Hours.**

Overview related to U.S. homeland defense and homeland security; includes cyber threats; cyberwar; securing cyberspace in public and private sector; protecting data, systems and networks that are connected to the Internet and the Internet of Things.

Prerequisite: Graduate classification.

Cross Listing: PSAA 608/CYBR 661.

CYBR 684 Professional Internship**Credits 0 to 6. 0 to 6 Other Hours.**

Directed internship in an organization to provide students with a learning experience supervised by professionals in organizational settings appropriate to the student's professional objectives.

CYBR 685 Directed Studies**Credits 0 to 12. 0 Lecture Hours. 0 Lab Hours. 0 to 12 Other Hours.**

Directed individual study in cybersecurity. May be repeated for credit.

CYBR 689 Special Topics in...**Credits 0 to 4. 0 Lecture Hours. 0 Lab Hours. 0 to 4 Other Hours.**

Selected topics in an identified area of cybersecurity. May be repeated for credit.

CYBR 691 Research**Credits 0 to 12. 0 Lecture Hours. 0 Lab Hours. 0 to 12 Other Hours.**

Research conducted under the direction of faculty member in cybersecurity topics. May be repeated for credit.

DASC - Dairy Science

DASC 606/NFSC 606 Microbiology of Foods

Credits 3. 3 Lecture Hours.

Nature and function of beneficial and defect-producing bacteria in foods; food-borne illness, effects of processing, storage and distribution; techniques for isolation and identification from foods.

Cross Listing: NFSC 606/DASC 606.

DASC 685 Directed Studies

Credits 1 to 4. 1 to 4 Other Hours.

Research methods and review of scientific literature dealing with individually selected problems in production or manufacturing and not pertaining to thesis or dissertation.

DASC 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research leading to thesis or dissertation in respective fields of dairy production and dairy manufacturing.

DDDS - Doctor Dental Surgery

DDDS 011 Anterior Composites and Esthetics

Credits 0.

Advanced concepts including diagnosis, preparation and restoration of anterior teeth utilizing composite materials.

DDDS 013 Orthodontic Clinical Selective

Credits 0.

Clinical selective course in which D4 students will provide limited (adjunctive) orthodontic treatment to patients as one component of a comprehensive treatment plan; treatment will be provided in conjunction with a third year orthodontic resident and under the supervision of an orthodontic department faculty member.

DDDS 015 Interdisciplinary C.A.R.E. and Collaboration

Credits 0.

Spring semester course provides an opportunity for D-3 students to become more proficient at evaluating and integrating emerging trends in clinical care and identifying factors that differentiate one case from another; clinical examples of interdisciplinary cases presented by post-doctoral residents that highlight a specific discipline (including contributions of other disciplines when appropriate); both conventional and unconventional treatment methods.

DDDS 017 Advanced Topics in Endodontics

Credits 0. 0 Lab Hours.

Advanced information and training in current endodontic topics including some of the state-of-the-art equipment used by endodontists today; discussion of complex diagnostic cases, advanced cleaning and shaping techniques (new rotary instrumentation systems), advanced obturation techniques (warm vertical gutta-percha), notions of the utilization of an endodontic surgical microscope and endodontic retreatment; does not require clinic but does require 2 hours of lab; class time and location announced by course director; participation by invitation only.

DDDS 018 Orthodontic Externship

Credits 0. 0 Other Hours.

Seminar portion provides an opportunity to enhance skills in the diagnosis and recognition of malocclusion and craniofacial anomalies and the ramifications of these diagnoses in the development of comprehensive treatment plans; examples of new cutting edge technologies that are rapidly changing the approach to treatment of orthodontic patients; externship provides an opportunity to discuss management considerations and other issues involved in the operation of a specialty practice; selective does not require clinic; class time and location to be announced by course director; class is limited to 10 D4 students only.

DDDS 024 Externship in Pediatric Dentistry

Credits 0. 0 Other Hours.

Introduction to the Advanced Education Program in Pediatric Dentistry; the delivery of dental care to medically and mentally compromised children and the delivery of dental care to children under various forms of sedation and general anesthesia. Participation in this selective course is by invitation only. Class is limited to 5 D4 students.

DDDS 025 Dental Ceramics

Credits 0. 0 Lab Hours.

Introduction to theory and fabrication of ceramo-metal and all-ceramic prosthodontic restorations; does not require clinic, but does require 25 hours of lab; class time and location to be announced by course director; participation in this selective is by invitation only and restricted to D4 students.

DDDS 027 Enteral Conscious Sedation and Emergency Protocols

Credits 0. 0 Lecture Hours.

Information regarding Level 1 permit rules and regulations, physical assessment, pharmacology of enteral agents, local anesthesia/nitrous implications, pediatric assessment and clinical protocols related to the safe delivery of Enteral Conscious Sedation; satisfies the didactic requirements for a Level 1 - Minimal Sedation Permit in the State of Texas.

DDDS 034 Dental Implantology

Credits 0. 1 Other Hour.

A clinical (treatment of patient who received dental implants), laboratory, surgical and restorative exercise; familiarization with patient management of dental implants; require clinic time; class time and location to be announced by course director; limited to 12 D4 students per semester.

DDDS 042 Athletic Mouthguards

Credits 0. 1 Lab Hour.

Attend seminars and fabricate athletic mouth guards for a community athletic team; does not require clinic but does require 15 hours of lab; spring and summer course will be held on the 3rd and 6th floors; class time and location to be announced by course director; limited to 25 D3/D4 students only per semester.

DDDS 043 Tutoring Skills Seminar

Credits 0. 1 Lecture Hour.

Trains individuals nominated by course directors to become effective peer tutors by developing skills in instructional technique; class time and location to be announced by course director; limited to D3 and D4 students only.

DDDS 065 Introduction to CEREC 3D Bluecam System

Credits 0. 0 Lecture Hours.

Exposure to and training on the CEREC system for CAD/CAM indirect restorations (crowns, onlays or inlays).

DDDS 092 Craniofacial Research**Credits 0. 1 Other Hour.**

For research participants in the Short Term Training Program only; introduction to dental and craniofacial research and the recognized values of biomedical research ethics.

DDDS 098 Dental Public Health**Credits 0. 0 Other Hours.**

Observation of oral health care services for at least four days in a private dental office; does not require class participation; by invitation only; limited to 50 D4 students.

DDDS 099 Public Health Sciences Community Preceptorship Program**Credits 0. 1 Other Hour.**

Offers observation and/or provision of oral health care services for at least four days in private practice, Indian Health Service, Veterans Administration hospital or other public health settings; does not require clinic time; class time and location to be announced by course director; class participation is by invitation only; limited to 30 D4 students.

DDDS 591**Credits 1 to 10. 1 to 10 Other Hours.****DDDS 601 Biological Foundations of Dentistry****Credits 3.5. 3.5 Lecture Hours.**

Introductory concepts that form the foundation for the dentistry; general principles of biochemistry, cellular and molecular biology, anatomy, histology, pharmacology and developmental biology; traditional structural-functional approaches and newer concepts from cell and molecular biology research.

DDDS 602 Human Structure, Function and Disease I**Credits 10. 10 Lecture Hours.**

An integrated organ/system-based approach to the human body in terms of macro and micro structural organization; basic functional relationships of the cells, tissues and organ systems of the human body, mechanisms of body physiological functions and growth and development and their importance in understanding normal, pathological and emergency functions related to the practice of dentistry; combination of anatomy, histology, medical physiology, embryology, growth and development and neuroscience to provide the foundation for the understanding of pathophysiology and pharmacology and the development of essential skills for diagnosing problems and understanding the etiology of disease.

DDDS 603 Human Structure, Function and Disease II**Credits 12. 12 Lecture Hours.**

An integrated organ/system-based approach to the human body in terms of macro and micro structural organization; basic functional relationships of the cells, tissues and organ systems of the human body, mechanisms of body physiological functions, diseases and growth and development and their importance in understanding normal, pathological and emergency functions related to the practice of dentistry; combination of essential elements of anatomy, histology, medical physiology, embryology, growth and development, neuroscience and pathology.

DDDS 604 Human Defenses and Responses to Infectious Disease**Credits 3. 3 Lecture Hours.**

Integration of immunology and microbiology to elucidate the mechanisms by which the body responds to a variety of stressors such as infectious organisms and the pathophysiological conditions that may result from these responses; organization and function of the immune system; immunopathological states that result from failure of the immune system such as immunodeficiency, hypersensitivity and autoimmune diseases and challenges that normal immune reactions can pose in modern medicine such as blood transfusion reactions and graft rejection; core concepts underlying organisms of infectious disease, disease vectors, modes of transmission, mechanisms of pathogenesis and pharmacologic principles of treatment; clinical evaluation, diagnostic testing and laboratory methodology for the identification and classification of microorganisms; characteristics of the patient and infectious organisms that influence therapeutic protocols; strategies for the management of resistance and infection control.

DDDS 605 Pathologic Basis of Disease**Credit 1. 1 Lecture Hour.**

Basic mechanisms of pathology as the foundation for understanding the diseases affecting different organ systems of the body including the oral cavity; correlation with clinical features which are the phenotypical presentation of those cellular and/or molecular changes and how they might impact the management of the dental patient; foundation for learning diseases occurring in the oral cavity and specific diseases of each organ system.

DDDS 611 Ethical Practice**Credits 4. 4 Lecture Hours.**

Foundations of the ethical practice of dentistry including cultural competency, academic and professional ethics and integrity, human behavior in dentistry and the basis of evidence based clinical practice.

DDDS 612 Integrated Practice of Dentistry**Credits 2.5. 2.5 Lecture Hours.**

Clinical skills and terms necessary to thoroughly assess a dental patient including principles of infection control, digital dental record platform (AXIUM), digital radiology platform (MIPACs), patient assessment tools; patient interviewing skills, extra-oral/intra-oral dental examinations, vital signs, screening laboratory tests; introduction to dental specialties, tray selection/alginate impressions, coronal tooth polishing, ergonomics, basic medical emergency training and effective use of oral hygiene instruction and fluorides.

DDDS 613 Introduction to Restorative Dentistry**Credits 6. 6 Lecture Hours.**

Form and function of primary and permanent teeth, concepts of ideal occlusion, dental caries and its effect on tooth structure and indications, materials and techniques associated with the restoration of teeth.

DDDS 6510 Biochemistry/Cell and Molecular Biology**Credits 3. 3 Lecture Hours.**

Chemical, metabolic cellular and molecular processes in the human body with applications to the practice of dentistry. Also includes cellular and molecular mechanisms that control gene expression and metabolic processes in human cells and tissues with an emphasis on dental examples.

DDDS 6520 Cariology and Prevention**Credit 1.5. 1.5 Lecture Hour.**

Cariology, identification, progress, prevention and management of dental decay and tobacco-related oral disease; oral hygiene index and clinical utilization of plaque removal materials and techniques.

DDDS 6540 Dental Anatomy**Credits 2. 2 Lecture Hours.**

Form and function of the human dentition.

DDDS 6543 Dental Anatomy-C**Credits 2. 2 Lab Hours.**

Drawing and carving teeth to scale; restoring tooth form in wax to normal relation with adjacent and opposing teeth; identification of extracted natural teeth.

DDDS 6580 Dental Materials**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

Introduction to the effects of physical, chemical and mechanical properties on the manipulation of materials used in dentistry; laboratory exercises to demonstrate clinical applications.

DDDS 6600 General Histology**Credits 3. 1.5 Lecture Hour. 1.5 Lab Hour.**

Microscopic and ultrastructural characteristics of cells, tissues and organ systems of the human; a brief introduction to function; light- and electron-microscopic study of human tissues.

DDDS 6640 Gross Anatomy**Credits 6. 3 Lecture Hours. 3 Lab Hours.**

Gross morphology of the human with special emphasis on the head and neck; dissection of the cadaver.

DDDS 6660 Growth and Development**Credit 1.5. 1.5 Lecture Hour.**

Prenatal growth of craniofacial structures; postnatal physical growth and maturation; development of the dentition and malocclusion; postnatal craniofacial development.

DDDS 6690 Human Behavior in Dentistry**Credits 0.5. 0.5 Lecture Hours.**

Application of principles of communication and motivation relevant to doctor-patient relations, patient compliance, stress management, and management of dental anxiety and fear.

DDDS 6724 Introduction to Clinical Practice I-C**Credits 0.5. 0.5 Other Hours.**

Observation and assistance of students in delivering dental services in preventive dentistry, oral diagnosis, periodontics and general dentistry, dental health education, patient interviewing, history taking and record management.

DDDS 6730 Introductory Ethics and Academic Integrity**Credits 0.5. 0.5 Lecture Hours.**

Contemporary introduction to ethics in the dental profession and academic integrity in dental education.

DDDS 6740 Immunology**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

A lecture course to teach the basic principles of immunology as it relates to the practice of dentistry and the process of infectious disease.

DDDS 6770 Neuroscience**Credit 1.5. 1.5 Lecture Hour.**

Gross structural features and functions of the human nervous system; emphasis on physiology of nerve membrane and receptors, neural pathways for the major sensory and motor systems; the cranial nerves; and the autonomies of the head and neck.

DDDS 6800 Occlusion**Credit 1. 1 Lecture Hour.**

Temporomandibular joint occlusal function; intercuspal relationships; mandibular movements; record transfer; use of a semi-adjustable articulator.

DDDS 6804 Occlusion - C**Credit 1. 1 Lab Hour.**

Preclinical laboratory to accompany course 6800.

DDDS 6820 Oral Histology**Credits 2. 1 Lecture Hour. 1 Lab Hour.**

Normal development and structure of tissues associated with the tooth proper, its adnexa and the oral cavity; light-, scanning electron-, and transmission electron- microscopy; emphasis on clinical aspects of oral histology.

DDDS 6840 Operative Dentistry**Credit 1. 1 Lecture Hour.**

Introduction to the treatment of diseased and injured teeth; emphasis on principles of cavity preparation; principles and manipulation of restorative materials.

DDDS 6844 Operative Dentistry - C**Credits 2. 2 Lab Hours.**

Preclinical laboratory to accompany course 6840.

DDDS 6850 Cultural Competence in Dental Health Care and Education**Credits 0.5. 0.5 Lecture Hours.**

Explores cultural differences and similarities while increasing awareness of values and beliefs that impact health care and communication. Must be taken on a satisfactory/unsatisfactory basis.

DDDS 6860 Introduction to Evidence Based Dentistry and Clinical Research**Credits 2.5. 2.5 Lecture Hours.**

Lecture and group sessions to introduce the functional principles of how to formulate a focused research question and how to search the literature to identify and evaluate evidence to answer that question.

DDDS 6870 Physiology**Credits 5.5. 2.8 Lecture Hours. 2.8 Lab Hours.**

Theory and principles of human body function; detailed study of the cell membrane, skeletal muscle, blood, heart, lungs, gastrointestinal system, kidney and endocrine glands; demonstration of many principles in laboratory exercises.

DDDS 6880 General Pathology**Credits 4. 2 Lecture Hours. 2 Lab Hours.**

This lecture course aimed at presenting the basic mechanisms on the organ systems of the body. It is also intended to provide an understanding of the more common diseases and, where appropriate, how they might impact the management of the dental patient.

DDDS 701 Dental Pharmacology**Credit 1.5. 1.5 Lecture Hour.**

Terms and principles essential to understanding the rational use of drugs in dental practice; pharmacology of medications used in the practice of dentistry; patient drug history evaluations and prescription writing techniques; information regarding the recognition and treatment of substance abuse.

DDDS 7010 Dental Auxiliary Utilization**Credits 0.5. 0.5 Lecture Hours.**

Utilization of the chair-side dental assistant; self-study module.

DDDS 702 Oral Pathology**Credits 2.5. 2.5 Lecture Hours.**

Diseases and conditions affecting the mouth and perioral tissues; basic pathological processes and how those processes affect and are modified by their occurrence in the oral cavity; oral manifestations of systemic conditions.

DDDS 7020 Endodontics**Credit 1. 1 Lecture Hour.**

Introduction to endodontics; technical and biological bases for nonsurgical root canal therapy; access, cleaning, shaping and filling of root canals.

DDDS 7024 Endodontics - C**Credit 1. 1 Lab Hour.**

Preclinical laboratory; discussion and demonstrations of techniques for nonsurgical root canal therapy including access opening, cleaning, shaping and filling of root canals in models and extracted teeth.

DDDS 7040 Fixed Prosthodontics**Credits 3. 3 Lecture Hours.**

Instruction in the design and fabrication of fixed partial dentures and crown restorations, implants, preparations, fabrication techniques and related dental materials.

DDDS 7044 Fixed Prosthodontics - C**Credits 4. 4 Lab Hours.**

Laboratory to accompany course DDDS 7040.

DDDS 7080 Introduction to Clinical Practice II**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

Introduction to Clinical Practice II. Introduction, orientation to the various clinical disciplines; concepts and implementation of quality assurance issues in dental practice, aseptic techniques, patient communications, diversity ethics, instrument management, initial introductory endodontics information, dental patient record management, rotations patient assignments, and culturally sensitive patient interviewing information.

DDDS 7084 Introduction to Clinical Practice II-C**Credit 1.5. 1.5 Other Hour.**

Clinic applications to accompany course 7080; including rotations through various discipline clinics, several simulations of clinical operative procedures using computer documentation, small group sessions where students participate in simulated culturally sensitive patient interviewing exercises.

DDDS 7100 Operative Dentistry**Credit 1. 1 Lecture Hour.**

Treatment of diseased and injured teeth; emphasis on principles of cavity preparation; principles and manipulation of restorative materials.

DDDS 7104 Operative Dentistry - C**Credits 2. 2 Lab Hours.**

Preclinical laboratory to accompany course 7100.

DDDS 711 Ethical Practice**Credit 1.5. 1.5 Lecture Hour.**

Culturally competent, professional and ethical practice of dentistry; health disparities in society and how populations are affected; ethical issues and concerns encountered in the practice of dentistry; medical-legal issues surrounding documentation in patient records and intricacies of proper patient record management.

DDDS 712 Integrated Practice of Dentistry**Credits 8.5. 8.5 Lecture Hours.**

An integrated approach to developing clinical skills in periodontics, operative dentistry, fixed prosthodontics, removable prosthodontics and endodontics.

DDDS 7120 Basic Principles and Techniques of Dentoalveolar Surgery**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

Introduction to the basic principles and techniques of dentoalveolar surgery; presurgical patient evaluation, risk management and assessment; surgical instrument identification and vocabulary, principles of soft tissue surgery, sterile techniques and infection control; preprosthetic surgical techniques.

DDDS 713 Integrated Practice of Dentistry - Preclinic**Credits 12. 24 Lab Hours.**

Integrated laboratory exercises for developing clinical skills in periodontics, operative dentistry, fixed prosthodontics, removable prosthodontics and endodontics.

DDDS 714 General Dentistry Clinic**Credits 5. 5 Other Hours.**

System of clinical instruction and operation by learning to provide or be responsible for all aspects of a given patient's treatment needs in a manner that closely resembles the way care is provided in private practice after graduation.

DDDS 7140 Preclinical Diagnostic Sciences II**Credit 1. 1 Lecture Hour.**

Introduction to clinical diagnostic methods and its vocabulary that contribute to the assessment of the dental patient. Techniques of gathering diagnostic information from the patient history, the extraoral physical examination and clinical laboratory studies.

DDDS 7160 Oral Pathology**Credits 2. 2 Lecture Hours.**

Etiology, pathogenesis and clinical aspect of oral disease and oral manifestations of systemic disease.

DDDS 7170 Oral Radiology**Credits 2. 2 Lecture Hours.**

The basic concepts of radiation physics, the generation of X-rays; operation of the X-ray unit; the control factors involved in the production of radiographic images, intraoral, extraoral and specialized radiographic acquisition techniques; and the radiographic interpretation of normal anatomy, dental caries, periodontal disease and dental anomalies.

DDDS 7173 Oral Radiography - C**Credits 0.5. 0.5 Other Hours.**

Supervised practical experience in the application of the principles of radiographic image formation.

DDDS 7190 Preclinical Diagnostic Sciences II**Credit 1. 1 Other Hour.**

Techniques and vocabulary that contribute to the diagnosis of dental diseases, abnormalities of teeth and non-dental lesions of the orofacial region. Physical and radiographic examination of oral/perioral tissues and the application of findings to diagnostic decisions are emphasized. Also, includes clinical documentation and dental treatment planning.

DDDS 721 Preclinical Diagnostic Science**Credits 4. 4 Lecture Hours.**

Vocabulary and diagnostic techniques that contribute to the physical assessment of the dental patient; an introduction to clinical medicine as well as terminology and techniques that contribute to the diagnostic process; physical and radiographic techniques; general aspects of the diagnostic method as well as the techniques of gathering diagnostic information from the patient history, physical examination and clinical laboratory studies; application of findings to assessment of common systemic diseases; basic concepts of radiation physics, generation of x rays, operation of the x-ray unit, control of factors involved in the production of radiographic images and intraoral, extraoral and specialized radiographic techniques; normal radiographic anatomy and radiographic diagnosis of dental caries, periodontal diseases and dental anomalies; tools and knowledge to safely and effectively evaluate patients prior to initiating a course of dental treatment.

DDDS 7210 Orthodontics**Credit 1. 1 Lecture Hour.**

Introductory information regarding evaluation of tooth position problems, treatment planning for minor orthodontic problems, including primary, mixed and adult dentitions. Diagnosis will be emphasized.

DDDS 7214 Orthodontics - C**Credit 1. 1 Lab Hour.**

Basic techniques of wire and acrylic manipulation, including soldering, welding, band fabrication and bonding in a laboratory setting.

DDDS 7230 Local Anesthesia / Nitrous Oxide-Oxygen Conscious Sedation
Credit 1. 0.5 Lecture Hours. 0.5 Other Hours.

Regional pain control; nitrous oxide-oxygen sedation and enteral conscious sedation, preanesthetic evaluation of patients, techniques of administration, pharmacology, side effects, complications and risk, and management of complications.

DDDS 7250 Pediatric Dentistry**Credits 2. 1 Lecture Hour. 1 Lab Hour.**

An introductory course to pediatric dentistry presented in small-group seminars, preclinical laboratory basic operative skills, diagnosis and treatment planning, behavioral management strategies, an introductory patient experience activity, and observation of clinical treatment in preparation for the pediatric clinical courses.

DDDS 7270 Periodontics**Credits 2. 2 Lecture Hours.**

Classification of periodontal disease, systemic and dysfunctional factors associated with periodontal disease, diagnosis and management of periodontal diseases, emphasis on specific therapeutic techniques.

DDDS 7274 Periodontics - C**Credit 1. 0.5 Lab Hours. 0.5 Other Hours.**

Periodontics – C. Clinical applications of course DDDS 7270.

DDDS 7290 Dental Pharmacology**Credits 2. 2 Lecture Hours.**

Terms and principles essential to understanding the rational use of drugs in dental practice; pharmacology of drugs used in dentistry; prescription writing techniques; evaluation of patient drug histories.

DDDS 731 Prevention and Management of Medical Emergencies in the Dental Office**Credit 1. 1 Lecture Hour.**

Preparations for handling emergencies; prevention, recognition and management of various emergencies; case scenarios and mock hands-on drills.

DDDS 7330 Patient Management**Credits 0.5. 0.5 Lecture Hours.**

Scientific basis for oral disease assessment and strategies for prevention and/or management of oral diseases.

DDDS 7350 Removable Prosthodontics**Credits 2. 2 Lecture Hours.**

Concepts and techniques for fabricating complete and partial dentures. Complete dentures fabricated on a manikin, theory of various denture occlusions; RPD design and construction, immediate dentures, restoration of implants, mouth preparation and laboratory communication.

DDDS 7353 Removable Prosthodontics - C**Credits 4. 4 Lab Hours.**

Preclinical laboratory to accompany course DDDS 7350.

DDDS 7400 Application of Evidence Based Dentistry I**Credits 0.5. 0.5 Other Hours.**

Small group sessions review clinically relevant articles using the foundational information from the first year evidence-based dentistry course.

DDDS 741 Basic Principles and Techniques of Exodontia and Dentoalveolar Surgery**Credit 1. 1 Lecture Hour.**

Principles and techniques of dentoalveolar surgery, with emphasis on pre-surgical patient evaluation, risk management, instrumentation and basic surgical principles; reviews and overviews of patient evaluation & risk assessment; management planning; surgical armamentarium; basic infection control and sterile technique; surgical principles of flap design; elevator and forceps selection and use.

DDDS 7410 National Dental Board Part I Review**Credit 1. 1 Lecture Hour.**

Presents discipline-based and case-based review material on the four sections of the NBDE including experience in taking practice examinations.

DDDS 742 Local Anesthesia and Nitrous Oxide/Conscious Sedations**Credit 1. 1 Lecture Hour.**

Dose calculations for local anesthesia throughout the oral cavity for a variety of patients; correct administration techniques; neural innervations of each area of the oral cavity and the areas anesthetized.

DDDS 7420 Microbiology**Credits 3. 3 Lecture Hours.**

Microorganism metabolism, genetics, bacteriology, virology, mycology, chemotherapy, sterilization, disinfection, and the microorganisms of oral diseases.

DDDS 761 Growth and Development Orthodontics**Credit 1.5. 1.5 Lecture Hour.**

Pre-clinical instruction in orthodontics; a systematic approach to decision making (diagnosis) and the treatment of minor orthodontic problems such as molar uprighting and diastema closure; fundamentals of treating primary and mixed dentition cases; space analysis and eruption guidance.

DDDS 771 Pediatric Dentistry**Credits 2.5. 1.5 Lecture Hour. 2 Lab Hours.**

Diagnostic, preventive and operative procedures and techniques specific to management of the pediatric patient; pediatric operative procedures; behavior guidance; local anesthesia; radiographic techniques for the child patient.

DDDS 8000 Summer Clinic - C**Credits 0. 0 Other Hours.**

All phases of clinic practice; mandatory attendance for third-year students.

DDDS 8004 Clinical Preventive Dentistry - C**Credits 0.5. 0.5 Other Hours.**

Clinical applications of disease detection, risk assessment, behavioral modification and needs-based preventative measures.

DDDS 8034 Comprehensive Care Program - C**Credits 4. 4 Other Hours.**

A clinical instruction and mentoring system with seminars that allows the student-clinician to learn to provide and coordinate patient care, as defined by clinical competencies, in a setting that simulates effectively managed dental practices that are patient centered and quality assured. It includes patient management skills, professionalism, ethics, time management, record and patient audits, work habits, treatment planning and other facets consistent with complete and socially sensitive patient care.

DDDS 8044 Dental Auxiliary Utilization - C**Credit 1. 1 Other Hour.**

Utilization of chairside dental assistant, clinical applications.

DDDS 8060 Endodontics**Credit 1. 1 Lecture Hour.**

Clinical endodontic; diagnosis and management of pulpal and periradicular disease; integration of pulpal biology and clinical practice.

DDDS 8064 Endodontics – C**Credit 1. 1 Other Hour.**

Clinical application of course DDDS 8060.

DDDS 8080 Fixed Prosthodontics**Credit 1.5. 1.5 Lecture Hour.**

Biological, physiological, anatomical, and esthetic factors related to diagnosis, treatment planning and patient treatment.

DDDS 8084 Fixed Prosthodontics - C**Credits 3. 3 Other Hours.**

Clinical application of course DDDS 8080.

DDDS 811 Ethical Practice**Credits 2. 2 Lecture Hours.**

Knowledge and skills to competently manage personal and business financial issues; leadership in the dental office and in the community as part of a health delivery team.

DDDS 812 Integrated Practice of Dentistry**Credits 6. 6 Lecture Hours.**

Critical thinking skills for application to patient treatment; patient management, preventive dentistry, treatment planning, case-based studies, evidence-based dentistry and critical thinking with interdisciplinary care; includes sleep disorders, bruxism, pain management, specialties and general dentistry practice, advanced dental materials and veneers.

DDDS 814 General Dentistry Clinic**Credits 15. 15 Other Hours.**

A system of clinical instruction and operation by learning to provide or be responsible for all aspects of a given patient's treatment needs in a manner that closely resembles the way care is provided in private practice after graduation; encompasses patient care and clinical rotations through the various disciplines.

DDDS 8140 Behavioral Dentistry/Dental Public Health**Credit 1. 1 Lecture Hour.**

Behavioral management principles relevant to pain, anxiety, cultural background, etc. Management, treatment, prevention and disease control for geriatric patients. Motivational interviewing exercises for protection and management of oral health is taught. Dental public health and concepts of managing geriatric patients is included in the latter half of the course.

DDDS 815 Clinical Dentistry**Credits 5. 5 Lecture Hours.**

Integrated didactic instruction regarding general restorative dentistry, including operative dentistry, fixed and removable prosthodontics and endodontics; includes the prevention, diagnosis and management of pulpal diseases, caries and tooth structure loss; focus on the materials, techniques and procedures the competent practitioner should know for the practice of general restorative dentistry.

DDDS 816 Advanced Clinical Dentistry**Credits 5. 4 Lecture Hours. 2 Lab Hours.**

Integrated didactic, laboratory and clinicals focusing on advanced restorative dentistry, including fixed implant restorative, implant removable prosthodontics, occlusion and orthodontics; includes diagnosis and management of malocclusion, sequelae of occlusal issues, management of patients with TMD and more advanced topics in restorative dentistry including diagnosis and management of full-mouth rehabilitation; focus on materials, techniques and procedures the competent practitioner should know for advanced restorative techniques.

DDDS 8160 Anesthesia in Dentistry**Credits 0.5. 0.5 Lecture Hours.**

Indications, contraindications, risks and techniques of enteral, parenteral and general anesthesia as applicable to dentistry.

DDDS 817 Surgical Interventions, Anesthesia and Pharmacology**Credits 5. 5 Lecture Hours.**

Advanced basic surgical procedures, concepts and periodontics; odontogenic infections (recognition and initial management); maxillary sinus conditions and disease; salivary gland disease and conditions; cleft lip and palate; principles of biopsy and tenets of biopsy referral; surgical placement of osseointegrated implants; maxillofacial trauma; surgical management of TMJ disorders; sleep-disordered breathing; includes indications, contraindications, risks and techniques of enteral, parenteral and general anesthesia; medical pharmacology; drug mechanisms of action, pharmacokinetics, pharmacodynamics, pharmacovigilance (adverse effects) and drug interactions; substance abuse.

DDDS 8180 Implant Dentistry**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

Indications and evidence-based rationale for dental implants, diagnosis and treatment planning, surgical concepts of placement, prosthodontic restorative treatment for single tooth, partially edentulous and completely edentulous patients, and maintenance procedures.

DDDS 8200 Occlusion**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment of potentially pathologic and clinically pathologic occlusal conditions; etiologic factors; effects of pathofunction on oral tissues; diagnostic aids and methods of treatment.

DDDS 8204 Occlusion – C**Credit 1. 1 Other Hour.**

Laboratory exercises to accompany course DDDS 8200.

DDDS 821 Clinical Principles of Patient Evaluation**Credits 2. 2 Lecture Hours.**

Problem based study of case histories and descriptions of a variety of head and neck diseases and conditions encountered in the practice of dentistry with integration of basic biomedical science knowledge; patient evaluation in cases to determine a diagnosis; techniques of differential diagnosis; diagnostic tests; patient management and referral.

DDDS 8220 Operative Dentistry**Credit 1.5. 1.5 Lecture Hour.**

Clinical principles of operative dentistry, the art and science of treating diseased teeth; restoration of proper tooth form, function and esthetics.

DDDS 8224 Operative Dentistry - C**Credits 3. 3 Other Hours.**

Clinical application of course DDDS 8220.

DDDS 8240 Advanced Principles and Techniques of Dentoalveolar Surgery**Credit 1. 1 Lecture Hour.**

Continuation of course DDDS 7120. Emphasis on more advanced principles and techniques of dentoalveolar surgery and patient management, advanced pre-prosthetic surgery, odontogenic infections and management, maxillary sinus conditions and disease, osseointegrated implants, and principles of biopsy.

DDDS 8241 Oral and Maxillofacial Surgery: Chronic Pain and Hospital Dentistry**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

Continuation of course DDDS 8240 with emphasis on more advanced surgical procedures and concepts; temporomandibular joint disease and chronic orofacial pain; peripheral nerve injuries; hospital dentistry; dentoalveolar and craniofacial trauma and management.

DDDS 8244 Oral and Maxillofacial Surgery - C**Credit 1. 1 Other Hour.**

Clinical application of course DDDS 8240.

DDDS 8264 Oral Diagnosis - C**Credit 1.5. 1.5 Other Hour.**

Provides the format for the student's practical experience in the diagnosis and treatment planning for the dental patient; clinical rotations with patient screening; the diagnosis and treatment planning for assigned clinical patients.

DDDS 8280 Clinical Principles of Patient Evaluation**Credits 2. 2 Lecture Hours.**

Diagnostic sciences and clinical principles of patient evaluation; interactive case-based, problem-solving course requiring the utilization of differential diagnosis skills of clinical oral signs and symptoms with an emphasis on oral pathology and a variety of head and neck diseases and conditions encountered in the practice of dentistry.

DDDS 8304 Oral Radiography - C**Credits 0.5. 0.5 Other Hours.**

Application of basic principles, procedures and techniques of clinical radiology to patients.

DDDS 8320 Orthodontics**Credit 1. 1 Lecture Hour.**

Introduction to orthodontic diagnosis and treatment; biological principles of tooth movement; cephalometric analysis; fundamentals of design, selection, and use of fixed and removable appliance systems and interdisciplinary interaction.

DDDS 8324 Orthodontics - C**Credits 0.5. 0.5 Other Hours.**

Clinical application of course DDDS 8320.

DDDS 8340 Pediatric Dentistry**Credit 1.5. 1.5 Lecture Hour.**

Lectures and small-group seminars covering treatment planning and child management; special problems in pediatric dentistry; emphasis on complete dental rehabilitation of patients.

DDDS 8344 Pediatric Dentistry - C**Credit 1. 1 Other Hour.**

Clinical application of course DDDS 8340.

DDDS 8360 Periodontics**Credit 1. 1 Lecture Hour.**

Introduction to advanced periodontal techniques; periodontics as it relates to general practice and comprehensive case analysis, and treatment planning emphasizing periodontal literature and interdisciplinary concerns.

DDDS 8364 Periodontics - C**Credits 2. 2 Other Hours.**

Clinical application of course DDDS 8360.

DDDS 8370 Professional Ethics**Credit 1. 1 Lecture Hour.**

Principles and theory; case analysis and decision-making; humanizing health care; general ethics; obligations of health professionals; bioethics; review of dental-specific ethics literature; includes small group sessions.

DDDS 8380 Medical Pharmacology**Credit 1.5. 1.5 Lecture Hour.**

Pharmacology of drugs used in medicine impacting dental patient evaluation and management. Focus is on fundamental drug information necessary for patient evaluation, the drug history and understanding potential adverse events, mechanisms of action, pharmacokinetics pharmacodynamics, and drug interactions with medications prescribed for dental procedures.

DDDS 8400 Removable Prosthodontics**Credit 1.5. 1.5 Lecture Hour.**

Fabrication delivery and management of removable complete dentures, partial dentures and immediate dentures.

DDDS 8404 Removable Prosthodontics - C**Credits 3. 3 Other Hours.**

Clinical application of course DDDS 8400.

DDDS 8500 Office Medical Emergencies**Credits 0.5. 0.5 Lecture Hours.**

Prevention, recognition and management of medical emergencies; management of medically compromised patients.

DDDS 8600 Advanced Removable Prosthodontics**Credit 1. 1 Lecture Hour.**

Extension of course DDDS 8400 with emphasis on advanced concepts for removable complete dentures, partial dentures, immediate dentures and prosthetic restoration of implants.

DDDS 8610 Periodontics**Credits 0.5. 0.3 Lecture Hours. 0.3 Lab Hours.**

Intended to reinforce the principles of non-surgical management of periodontal disease and to better prepare for first clinical experiences; a review of periodontal hand instrumentation, infection control in the clinic and hands-on set-up and use of the Cavitron ultrasonic instrument; includes the relationship of periodontics and restorative dentistry and the proper usage of radiosurgery in dentistry.

Prerequisites: DDDS 7270 and DDDS 7274.

DDDS 871 Pediatric Dentistry**Credits 2. 2 Lecture Hours.**

Overview of pediatric dentistry covering topics essential to the management of and treatment planning for the child patient; topics related to evaluation and comprehensive dental rehabilitation.

DDDS 9000 Summer Clinic**Credits 0.**

All phases of clinical practice; mandatory attendance for fourth-year students.

DDDS 9004 Clinical Services Assignment - C**Credits 4.5. 4.5 Other Hours.**

Clinical Services Assignment – C. Continuing clinical experience in selected specialties; emergency treatment in a practice setting; oral and maxillofacial surgery appropriate for general practice; oral diagnosis; treatment planning.

DDDS 901 Board Review**Credits 4. 4 Lecture Hours.**

Structured review of dental and craniofacial knowledge and clinical skills in preparation for the Integrated National Dental Board Examination (INDBE) and the Western Regional Board (WREB) Comprehensive Treatment Planning (CTP) Examination and WREB Clinical Examination.

DDDS 9030 Diagnosis and Treatment Planning Seminar**Credit 1. 1 Lecture Hour.**

Lecture and small group sessions familiarize students with “phase treatment planning,” interviewing patients, systemic disease issues, disease control, definitive treatment, maintenance and recall.

DDDS 9040 Advancements in Techniques and Materials**Credit 1.5. 1.5 Lecture Hour.**

Innovations and advancements in dental materials and techniques; advantages and disadvantages; scientific basis for selection of materials and techniques.

DDDS 9044 General Dentistry - C**Credits 20. 20 Other Hours.**

All phases of general dentistry performed as required for each assigned patient; seminars and student presentations. The General Dentistry program is inclusive of fixed prosthodontics, geriatrics, removable prosthodontics, operative dentistry, oral and maxillofacial surgery, oral diagnosis, orthodontics, pediatric dentistry, periodontics, endodontics, community health and preventive dentistry, oral radiography, and special care clinic.

DDDS 9050 Selected Advanced Topics in Oral And Maxillofacial Surgery**Credits 0.5. 0.3 Lecture Hours. 0.3 Lab Hours.**

Emphasis is on more advanced and complex oral and maxillofacial surgical concepts more typically performed by the specialist in oral and maxillofacial surgery; extending the student's capability for patient evaluation. Topics include major facial trauma, bone grafting, reconstruction of head and neck defects, orthognathics, life threatening infections and others.

DDDS 9070 Orthodontics**Credit 1. 1 Lecture Hour.**

Comprehensive case analysis and treatment planning; role of the general dentist in detection, interception and treatment of orthodontic problems.

DDDS 9080 Community Dentistry Externship**Credits 0.5. 0.5 Other Hours.**

Clinical experiences with historically underserved populations throughout a community dental center, the juvenile justice center, and other public health facilities.

DDDS 9090 Pediatric Dentistry**Credit 1. 1 Lecture Hour.**

Lectures and small-group seminars, including child abuse, practice management, cleft lip/palate and case-based problem-solving exercises.

DDDS 911 Ethical Practice**Credit 1. 1 Lecture Hour.**

Obligations of the health professionals; responsibility to future practitioners; examine, define and analyze ethical problems pertinent to dental practice; common ethical problems in practice; the ADA Code and the Dental Practice Act.

DDDS 9110 Applied Pharmacology**Credit 1. 1 Lecture Hour.**

Pharmacology in dental practice; therapeutic use of drugs; toxicology; practice in evaluating patient drug histories with special emphasis on drug interactions in patients receiving multiple drug therapy.

DDDS 9120 Practice Administration**Credit 1. 1 Lecture Hour.**

Associateships, other professional practice opportunities, purchasing existing practices; locating and financing a dental practice; taxes and insurance; management, staffing and delegation of duties marketing; Occupational Safety and Health Administration; stress management; third-party consideration.

DDDS 914 General Dentistry Clinic**Credits 30. 30 Other Hours.**

Diagnose and provide comprehensive oral health service in a professional manner; clinical experience that resembles a broadly-based general dental practice including personnel and patient management; professionalism demonstrated by word and action, the commitment to providing competent care in a timely patient-centered manner respecting the patient's values and interests; complete treatment of a group of assigned patients in a professional manner involving all dental disciplines; may include assigning patients in requested disciplines; participation in preceptorships, internships or mentoring programs provided in the Comprehensive Care Program as needed; opportunity for self-directed learning experience and the development of skills beyond competency in certain areas of clinical care; encompasses clinical rotations through various disciplines and venues.

DDDS 9140 Professional Ethics and Dental Jurisprudence**Credits 0.5. 0.5 Lecture Hours.**

Principles and theory, professional responsibility; case discussion and analysis/decision-making; humanizing health care; virtue ethics; legal aspects of dental practice; state board interactions and policies.

DDDS 915 Comprehensive Care for Medically Compromised and Special Needs Patients**Credit 1. 1 Lecture Hour.**

Advanced principles of patient evaluation, diagnostic processes and available treatment modalities.

DDDS 9160 Senior Seminar**Credit 1. 1 Lecture Hour.**

Topics and issues of special concern to dental practitioners.

DDDS 9190 Advanced Principles of Patient Evaluation**Credit 1. 1 Lecture Hour.**

Advanced problem-solving for complex dental diagnostic issues; case presentations with focus on medically compromised patients, uncommon dental diseases and treatment planning.

DDDS 9200 Comprehensive Care for the Medically Compromised and Special Needs Patients

Credits 0.5.

Reviews management and treatment issues relevant to medically compromised and special needs patients. Includes health history, medication issues, treatment planning, material and techniques, clinical management and needs assessment for sedation. The information enhances the students interactions in the special care clinic and the General Dentistry Clinic.

DDDS 9210 Advanced Technologies in General Dentistry

Credits 0.5.

Utilization of advanced technologies such as radiosurgery, the dental operating microscope, soft tissue lasers, CAD/CAM systems, the Isolite retraction/illumination/aspiration system and the iTero Optical impression system in order to familiarize the students with the operation and use of this equipment prior to use in the clinic.

DDDS 9220 Enteral Conscious Sedation and Emergency Protocols

Credit 1.

Provides information regarding Level 1 permit rules and regulations, physical assessment, pharmacology of enteral agents, local anesthesia/nitrous implications, pediatric assessment and clinical protocols related to the safe delivery of Enteral Conscious Sedation; satisfies the didactic requirements for a Level 1 Minimal Sedation Permit in the State of Texas. Must be taken on a satisfactory/unsatisfactory basis.

DDDS 9230 Advanced Endodontics Concepts

Credits 0.5. 6 Lecture Hours.

Advanced course for senior dental students to broaden their understanding of clinical endodontic concepts including cleaning and shaping techniques, complex diagnoses, obturation systems, irrigation protocols, inter-relationship of endodontics with restorative and periodontal principles, resorption, and National Board review.

Prerequisites: ENDO 7020, ENDO 7024, ENDO 8060.

DDDS 9240 National Board Dental Exam Part II Review

Credit 1. 1 Lecture Hour.

Formal establishment of a mandatory NDBE II review course in the fall semester of the D4 curriculum; intended outcome of this review is to increase the first-time pass rate on the NBDE II.

Prerequisite: DDDS 7410.

DDDS 9250 Managing Cultural Issues in Patient Care

Credits 0.5. 0.5 Lecture Hours.

Allows student reflection on care provided to patients who identify with cultures that differ from their own to assess strengths and weaknesses in their ability to provide culturally sensitive care and recognize strategies that can be used to effectively manage similar encounters in the future. Must be taken on a satisfactory/unsatisfactory basis.

DDDS 961 Orthodontics IV Interdisciplinary and Clinical Topics in Orthodontics

Credit 1. 1 Lecture Hour.

Orthodontics and interaction with other dental and medical specialists.

DDDS 971 Pediatric Dentistry

Credit 1. 1 Lecture Hour.

Integrative topics essential to the management of and treatment planning for the pediatric patient; complete dental rehabilitation of the patient; current topics most pertinent to pediatric dentistry.

DHUM - Digital Humanities

DHUM 601 Digital Humanities Theory and Practice

Credits 3. 3 Lecture Hours.

Introduction to what digital humanists do, the tools they use to do it, and how they go about their work; theoretical ideas that inform the field; application of theory to the critical assessment of online digital projects in the field.

Prerequisite: Graduate classification.

DPHS - Dental Public Health

DPHS 600 Dental Public Health Practicum

Credits 0 to 9. 0 to 9 Other Hours.

Design and conduct population-based studies to answer oral and public health questions; critique and synthesize scientific literature; select, plan, conduct and write a report on two research projects with dental public health related topics required for ABDPH certification. May be taken three times for credit.

DPHS 610 Practice Transformation

Credit 1. 1 Lecture Hour.

How to work in multidisciplinary teams; evaluation and improvement of the care delivered to patients and populations; embracing dental and population health technologies; leading the transformation of healthcare in the 21st century.

Prerequisite: Enrolled in a clinical dentistry certificate program.

DPHS 620 Dental Public Health Field Experience I

Credits 0 to 10. 0 to 10 Other Hours.

Apply and test theories, skills, knowledge; public health policy and management preparation. May be taken four times for credit.

DPHS 625 Dental Public Health Field Experience II

Credits 0 to 10. 0 to 10 Other Hours.

Apply and test theories, skills knowledge; public health policy and management preparation. May be taken four times for credit.

DPHS 630 Dental Public Health Field Experience III

Credits 0 to 10. 0 to 10 Other Hours.

Apply and test theories, skills, knowledge; public health policy and management preparation. May be repeated four times for credit.

DPHS 689 Special Topics In...

Credits 0 to 4. 0 to 4 Other Hours.

Selected topics in an identified area of dental public health. May be repeated for credit.

DPHS 691 Research

Credits 0 to 10. 0 to 10 Other Hours.

Research for thesis or dissertation.

ECEN - Electrical & Comp Engr

ECEN 600 Experimental Optics

Credits 4. 3 Lecture Hours. 2 Lab Hours.

Hardware, electronic interfaces, and experimental techniques for optics including optical mechanics, component mounting techniques, passive optical components, interferometers and precision alignment, basic electronics including op amps, active optical elements such as acousto-optics, servos in optics, laser intensity stabilization, lock-in amplifier and frequency stabilization.

Prerequisite: Approval of instructor.

ECEN 601 Mathematical Methods in Signal Processing**Credits 3. 3 Lecture Hours.**

Representations and algorithms for signal processing; linear algebra, vector spaces, normed and inner product spaces; projection, orthogonalization, rank-nullity theorem; matrix representations, singular value decomposition; sampling, Fourier analysis, spectral methods; statistical signal processing and linear estimation.

ECEN 602 Computer Communication and Networking**Credits 3. 3 Lecture Hours.**

Computer communication and computer networks; use of the International Standards Organization (ISO) seven-layer Open Systems Interconnection model as basis for systematic approach; operational networks to be included in the study of each layer; homework assignments to make use of a campus computer network.

Prerequisite: ECEN 646 or equivalent probability background.**ECEN 603 Time-frequency Analysis and Multirate Signal Processing****Credits 3. 3 Lecture Hours.**

Basic functions; short-time Fourier transform; Gabor transform; linear time-scale/time-frequency analysis; time-frequency resolution; Wigner-Ville distribution; Ambiguity function; wavelet series; multi-rate filter bank; orthogonality and biorthogonality; subband coding and pattern recognition.

ECEN 604 Channel Coding for Communications Systems**Credits 3. 3 Lecture Hours.**

Channel coding for error control, finite field algebra, block codes, cyclic codes; BCH codes; and convolutional codes; Trellis coded modulation, including ungerboeck codes and coset codes; performance on gaussian and rayleigh channels; applications to communications systems.

Prerequisites: Approval of instructor and graduate classification.**ECEN 605 Linear Multivariable Systems****Credits 3. 3 Lecture Hours.**

Single input single output systems, multivariable systems, linear servomechanism problem and linear quadratic optimal control; emphasis on linear systems, classical linear control theory and modern state space control theory.

Prerequisite: Graduate classification.**ECEN 606 Nonlinear Control Systems****Credits 3. 3 Lecture Hours.**

Techniques available to analyze and synthesize nonlinear and discontinuous control systems. Modern stability theory, time-varying systems, DF, DIDF, Lyapunov Theory, adaptive control, identification and design principles for using these concepts; examples from a variety of electronic and electromechanical systems.

Prerequisite: ECEN 605.**ECEN 607 Advanced Analog Circuit Design Techniques****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Design of analog circuits using conventional and non-conventional voltage techniques, including floating gate, bulk driven and enhanced wide swing structures.

Prerequisite: ECEN 474 or approval of instructor.**ECEN 608/MEEN 674 Modern Control****Credits 3. 3 Lecture Hours.**

Vector Norms; Induced Operator Norms; Lp stability; the small gain theorem; performance/robustness trade-offs; L1 and Hoo optimal P control as operator norm minimization; H2 optimal control.

Prerequisite: ECEN 605 or equivalent.**Cross Listing:** MEEN 674/ECEN 608.**ECEN 609 Adaptive Control****Credits 3. 3 Lecture Hours.**

Basic principles of parameter identification and parameter adaptive control; robustness and examples of instability; development of a unified approach to the design of robust adaptive schemes.

Prerequisite: ECEN 605 or equivalent.**ECEN 610 Mixed-Signal Interfaces****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Analog-to-digital and digital-to-analog converter architectures including Nyquist rate and oversampled converters; definition of basic data converter specifications and figures of merit; background and foreground calibration techniques to improve performance of data converters; low-power (green topologies) data converters design; state of the art mixed-signal interfaces such as transmitters and receivers front-ends in wireless and wireline communications transceivers; introduction to calibration techniques for digitally-assisted transceivers.

Prerequisite: ECEN 474 or approval of instructor.**ECEN 611 General Theory of Electromechanical Motion Devices****Credits 3. 3 Lecture Hours.**

Winding function theory; inductances of an ideal doubly cylindrical machine; inductances of salient-pole machines, reference frame and transformation theory; dynamic equations of electric machines; steady-state behavior of electric machines.

Prerequisite: Approval of instructor or graduate classification.**ECEN 612 Computer Aided Design of Electromechanical Motion Devices****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Magnetic circuits and field distribution of electric machines; main flux path calculation; calculation of magnetizing and leakage inductance; calculation of electric machine losses; principle of design of various electric machines; finite element design of electromechanical motion devices.

Prerequisite: Approval of instructor or graduate classification.**ECEN 613 Rectifier and Inverter Circuits****Credits 3. 3 Lecture Hours.**

Analysis/design of single phase, three phase rectifiers; phase control and PWM rectifiers; line harmonics; power factor; harmonic standards; passive and active correction methods; inverters; PWM methods; effect of blanking time; zero voltage switching and multilevel inverter; application of these systems in UPS and AC motor drives.

Prerequisite: ECEN 438 or approval of instructor.**ECEN 614 Power System State Estimation****Credits 3. 3 Lecture Hours.**

The large electric power system state estimation problem; issues of network observability; bad measurements detection/identification; sparse matrix vector techniques for computational efficiency.

Prerequisite: ECEN 460.**ECEN 615 Methods of Electric Power Systems Analysis****Credits 3. 3 Lecture Hours.**

Digital computer methods for solution of the load flow problem; load flow approximations; equivalents; optimal load flow.

Prerequisite: ECEN 460 or approval of instructor.**ECEN 616 Power System Electromagnetic Transients****Credits 3. 3 Lab Hours.**

Modeling of power system components for electromagnetic transient studies; digital computer methods for computation of transients.

Prerequisites: ECEN 459 and ECEN 460.

ECEN 617 Advanced Signal Processing for Medical Imaging**Credits 3. 3 Lecture Hours.**

This is a graduate-level course covering several advanced signal processing topics in medical imaging: multi-dimensional signal sampling and reconstruction, bio-signal generation and optimal detection, Fourier imaging, Radon transform-based tomographic imaging, multi-channel signal processing, as well as constrained reconstruction, rapid imaging, image segmentation, registration and analysis.

Prerequisite: Approval of the instructor.**ECEN 619 Internet Protocols and Modeling****Credits 3. 3 Lecture Hours.**

Wide spectrum of Internet protocols that make it work; analytical capabilities to evaluate the performance of complex Internet protocols; aspects of the Internet protocols, including principles, design and implementation, and performance modeling and analysis; core components of Internet protocols such as transport (TCP, UDP), network and routing (IP, RIP, OSPF, EGP, BGP-4, etc.)

Prerequisite: Approval of instructor.**ECEN 620 Network Theory****Credits 3. 3 Lecture Hours.**

Development and application of advanced topics in circuit analysis and synthesis in both the continuous and discrete time and frequency domains.

Prerequisite: ECEN 326 or equivalent.**ECEN 621 Mobile Wireless Networks****Credits 3. 3 Lecture Hours.**

Foundations of advanced mobile wireless networks, how they are designed, and how well they perform. Topics include fundamentals on mobile wireless networks, TCP/IP over wireless links, fading-channel modeling, CDMA, OFDM, MIMO, error control, IEEE 802.11 protocols, cross-layer optimization, wireless QoS, mobile multicast, VANETs, wireless-sensor networks, wireless networks security.

Prerequisites: Basic-level "Computer Networks" class or consent of instructor.**ECEN 622 Active Network Synthesis****Credits 3. 3 Lecture Hours.**

Methods of analyzing and synthesizing active networks; sensitivity analysis, methods of rational fraction approximation, OP AMP modeling and stability.

Prerequisite: ECEN 457 or equivalent.**ECEN 625 Millimeter-wave Integrated Circuits****Credits 3. 3 Lecture Hours.**

Applications of millimeter-wave integrated circuits for wireless transceiver; principles of operation, modeling, design and fabrication of the most common millimeter-wave CMOS, SiGe and RF MEMS circuits.

Prerequisite: Graduate classification; approval of instructor.**ECEN 626 Antenna Theory and Technique****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Applied electromagnetics and physical layer concepts for modern communication systems; topics include: advanced antenna theory and analytical techniques (e.g., variational and perturbational); full-wave tools for complex radiating structures and fading environments; reconfigurable antennas and device integration; multiple antenna techniques; and fabrication, measurement, and calibration methods.

Prerequisite: Approval of instructor.**ECEN 628 Robust and Optimal Control****Credits 3. 3 Lecture Hours.**

Modern design of (Proportional Integral Derivative) controllers, robust control under parametric uncertainty and optimal control using quadratic optimization.

Prerequisite: ECEN 605; graduate classification.**ECEN 629 Applied Convex Optimization****Credits 3. 3 Lecture Hours.**

Introduction to convex optimization including convex set, convex functions, convex optimization problems, KKT conditions and duality, unconstrained optimization, and interior-point methods for constrained optimization; applications in information science, digital systems, networks and learning.

Prerequisites: ECEN 601 or equivalent.**ECEN 630 Analysis of Power Electronic Systems****Credits 3. 3 Lecture Hours.**

Analysis and control of semiconductor switching power converters using specialized methods such as Fourier series, state-space averaging, time domain transfer functions, sliding mode, quadrometrics and other discontinuous orthogonal functions; application of the above techniques in practice; selected research publications.

Prerequisite: Approval of instructor.**ECEN 631 Fiber-Optic Devices****Credits 3. 3 Lecture Hours.**

Fiber optic waveguides; directional couplers; polarization; poincare sphere fractional wave devices; PM fiber; interferometric devices and sensors fiber gyroscope; faraday effect devices; multiplexing techniques.

Prerequisite: Approval of instructor.**ECEN 632 Motor Drive Dynamics****Credits 3. 3 Lecture Hours.**

Dynamic of electric machinery in general and in particular induction machines; scalar control as well as vector control of electric machines; direct and indirect vector control for synchronous and induction motors; parameter sensitivity and saturation effects in indirect field orientation and field weakening operation of induction machines.

Prerequisites: Approval of instructor.**ECEN 633 Optimum Control Systems****Credits 3. 3 Lecture Hours.**

Variational approach to the development of algorithms for the solution of optimum control problems; necessary and sufficient conditions, numerical methods, and analysis and comparison of optimal control results to classical theory.

Prerequisite: ECEN 605.**ECEN 635 Electromagnetic Theory****Credits 3. 3 Lecture Hours.**

Maxwell's equations, boundary conditions, Poynting's theorem, electromagnetic potentials, Green's functions, Helmholtz's equation, field equivalence theorems; applications to problems involving transmission scattering and diffraction of electromagnetic waves.

Prerequisites: ECEN 322; ECEN 351 or equivalent.**ECEN 636 Phased Arrays****Credits 3. 3 Lecture Hours.**

Theory and application of phased array antennas, radiators and sensors; spatial and spectral domain analysis of phased arrays including element-by-element, infinite array and Fourier methods; applications will include phased arrays, adaptive arrays, and synthesis array antennas; for use in radar, imaging and biomedical treatment and diagnosis.

Prerequisite: ECEN 322 or equivalent.

ECEN 637 Numerical Methods in Electromagnetics**Credits 3. 3 Lecture Hours.**

Numerical techniques for solving antenna, scattering and microwave circuits problems; finite difference and finite element differential equation methods with emphasis on the method of moments integral equation technique.

Prerequisites: ECEN 351 or ECEN 635; CSCE 203 or equivalent.

ECEN 638 Antennas and Propagation**Credits 3. 3 Lecture Hours.**

Application of Maxwell's equations to determine electromagnetic fields of antennas; radiation, directional arrays, impedance characteristics, aperture antennas.

Prerequisite: ECEN 351.

ECEN 639 Microwave Circuits**Credits 3. 3 Lecture Hours.**

Introduction to high frequency systems and circuits; provides background information needed to understand fundamentals of microwave integrated circuits; includes usage of S-parameters, Smith Charts, stability considerations in designing microwave circuits; utilizes CAD program "Super Compact" demonstrating design synthesis optimization and analysis of monolithic devices and circuits.

Prerequisite: Graduate classification.

ECEN 640 Thin Film Science and Technology**Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Thin film technology in semiconductor industry; topics include the basic growth mechanisms for thin films (growth models, lattice matching epitaxy and domain matching epitaxy), the instrumental aspects of different growth techniques and advanced topics related to various applications.

Prerequisites: Graduate classification.

ECEN 641 Microwave Solid-State Integrated Circuits**Credits 3. 3 Lecture Hours.**

Microwave two-terminal and three-terminal solid-state devices; waveguide and microstrip solid-state circuits; theory and design of microwave mixers, detectors, modulators, switches, phase shifters, oscillators and amplifiers.

Prerequisite: ECEN 351.

ECEN 642 Digital Image Processing**Credits 3. 3 Lecture Hours.**

Digital Image Processing techniques; stresses filtering, transmission and coding; fast transform techniques; convolution and deconvolution of model noise.

Prerequisites: ECEN 447 and ECEN 601.

ECEN 643 Electric Power System Reliability**Credits 3. 3 Lecture Hours.**

Design and application of mathematical models for estimating various measures of reliability in electric power systems.

Prerequisite: ECEN 460 or approval of instructor.

ECEN 644 Discrete-Time Systems**Credits 3. 3 Lecture Hours.**

Linear discrete time systems analysis using time domain and transform approaches; digital filter design techniques with digital computer implementations.

Prerequisite: ECEN 601.

ECEN 646 Probability and Random Processes for Information Science**Credits 3. 3 Lecture Hours.**

Concepts of probability and random processes necessary for advanced study of information science, digital communications, networks, stochastic control and other engineering systems involving uncertainty; applications to detection, channel coding, queuing, optimization and inference.

ECEN 647 Information Theory**Credits 3. 3 Lecture Hours.**

Definition of information; coding of information for transmission over a noisy channel including additive gaussian noise channels and waveform channels; minimum rates at which sources can be encoded; maximum rates at which information can be transmitted over noisy channels.

Prerequisite: ECEN 646 or equivalent probability background.

ECEN 648 Principles of Magnetic Resonance Imaging**Credits 3. 3 Lecture Hours.**

Introduction to the theory and design of magnetic resonance imaging systems; fundamental physical and mathematical introduction to image acquisition and reconstruction using magnetic resonance; overview of imaging system design, including magnets, imaging gradients and radio-frequency systems, contrast mechanisms, resolution.

Prerequisite: ECEN 314 or ECEN 322 or approval of instructor.

ECEN 649 Pattern Recognition**Credits 3. 3 Lecture Hours.**

Introduction to the underlying principles of classification, and computer recognition of imagery and robotic applications.

Prerequisites: MATH 601 and/or STAT 601 and approval of instructor.

ECEN 650 High Frequency GaAs/SiGe Analog IC Design**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

High frequency integrated circuit design using non-conventional technologies such as GaAs and SiGe, with the emphasis on wireless and broadband communication circuits. Device operation, basic building blocks and typical applications.

Prerequisite: ECEN 474 or approval of instructor.

ECEN 651 Microprogrammed Control of Digital Systems**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Hardware and software concepts involved in the design and construction of microprocessor-based digital systems; microprocessor architecture; bussing; interfacing; data input/output; memories; and software development for operation and testing; design projects with microprocessors and related components.

Prerequisites: ECEN 350/CSCE 350 and ECEN 449 or approval of instructor.

ECEN 653 Computer Arithmetic Unit Design**Credits 3. 3 Lecture Hours.**

Digital computer arithmetic unit design, control and memory; microprocessor arithmetic logic unit (ALU) design. High-speed addition, subtraction, multiplication and division algorithms and implementations; design and simulation with integrated circuit components and VLSI circuits.

Prerequisite: ECEN 651.

ECEN 654 Very Large Scale Integrated Systems Design**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Design and fabrication of microelectronic circuits such as registers, selectors, PLAs, sequential and micoprogrammed machines via large scale integrated circuitry with emphasis on high-level, structured design methods for VLSI systems; design small to medium scale integrated circuits for fabrication by industry.

Prerequisites: ECEN 454 or equivalent undergraduate VLSI course.

ECEN 655 Advanced Topics in Channel Coding**Credits 3. 3 Lecture Hours.**

Advanced topics in Channel Coding including turbo codes, low density parity check codes, iterative decoding and applications of iterative decoding principles.

Prerequisite: ECEN 604 or graduate classification.**ECEN 658 Low-Noise Electronic Design****Credits 3. 3 Lecture Hours.**

Low-noise design; surveying the subject of handling electronic noise from theory to measurement, design, research and developments.

Prerequisite: Approval of instructor.**ECEN 659/CSCE 659 Parallel/Distributed Numerical Algorithms and Applications****Credits 3. 3 Lecture Hours.**

A unified treatment of parallel and distributed numerical algorithms; parallel and distributed computation models, parallel computation or arithmetic expressions; fast algorithms for numerical linear algebra, partial differential equations and nonlinear optimization.

Prerequisite: MATH 304 or equivalent.**Cross Listing:** CSCE 659/ECEN 659.**ECEN 660 BioMEMS and Lab-on-a-Chip****Credits 3. 3 Lecture Hours.**

Introduction to lab-on-a-chip technology; microfabrication techniques commonly used in BioMEMS device fabrication; microfluidics miniaturized systems for chemical and biomedical applications such as separation, diagnosis tools, implantable devices, drug delivery, and microsystems for cellular studies and tissue engineering; will gain a broad perspective in the area of miniaturized systems for biomedical and chemical applications.

Prerequisite: Approval of instructor.**ECEN 661 Advanced Digital Communications****Credits 3. 3 Lecture Hours.**

Digital communication systems; coding for discrete sources and quantization; source and channel waveforms, signal spaces; modulation and demodulation, random noise; detection, error control coding, efficient decoding algorithms.

Prerequisite: ECEN 646 or equivalent.**ECEN 662 Estimation and Detection Theory****Credits 3. 3 Lecture Hours.**

Probabilistic signal detection theory and parameter estimation theory; Neyman-Pearson, UMP, and locally optimal tests; discrete time Markov processes and the Kalman and Wiener filters; bayesian, maximum likelihood and conditional mean estimation methods.

Prerequisite: ECEN 646.**ECEN 663 Data Compression with Applications to Speech and Video****Credits 3. 3 Lecture Hours.**

Characterization and representation of waveforms; digital coding of waveforms including PCM, delta modulation, DPCM, tree/trellis coding, runlength coding, sub-band coding and transform coding; rate distortion theoretic performance bounds.

Prerequisites: ECEN 601 and ECEN 646.**ECEN 664 Nanotechnology Fabrication****Credits 3. 3 Lecture Hours.**

Cutting edge nanostructure fabrication techniques for both top-down and bottom up approaches.

Prerequisite: Approval of instructor.**ECEN 665 Integrated CMOS RF Circuits and Systems****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Introduction to wireless communication systems at the theoretical, algorithmic and circuit levels; emphasis on simulation at the architecture, transistor levels of the communication systems; focus on circuits implementable on CMOS and BiCMOS technologies.

Prerequisites: ECEN 453, ECEN 456, ECEN 474.**ECEN 666 Power System Faults and Protective Relaying****Credits 3. 3 Lecture Hours.**

Calculation of power system currents and voltages during faults; protective relaying principles, application and response to system faults.

Prerequisite: ECEN 460 or approval of instructor.**ECEN 667 Power System Stability****Credits 3. 3 Lecture Hours.**

Steady-state, dynamic and transient stability of power systems; solution techniques; effect of generator control systems.

Prerequisite: ECEN 460 or approval of instructor.**ECEN 668 High Voltage Direct Current (HVDC) Transmission****Credits 3. 3 Lecture Hours.**

Overview of HVDC systems; comparison of AC and DC power transmission; study of six-pulse and twelve-pulse power converters; analysis and control of HVDC systems; harmonics and power factor effects; system faults and misoperations; state of the art and future developments in HVDC technology; inspection trips.

Prerequisite: Approval of instructor.**ECEN 669 Engineering Applications in Genomics****Credits 3. 3 Lecture Hours.**

Tutorial introduction to the current engineering research in genomics. The necessary Molecular Biology background is presented and techniques from signal processing and control are used to (i) unearth intergene relationships (ii) model genetic regulatory networks and (iii) alter their dynamic behavior.

Prerequisite: ECEN 605 or approval of instructor.**ECEN 670 Fiber Optic Networks****Credits 3. 3 Lecture Hours.**

Components, topologies and architecture for communication networks based on the optical fiber transmission medium; examples based on recent publications in technical literature.

Prerequisite: Graduate classification.**ECEN 671 Solid State Devices****Credits 3. 3 Lecture Hours.**

Development of mathematical analysis and systematic modeling of solid state devices; relationships of measurable electrical characteristics to morphology and material properties of solid state devices, p-n junction, bipolar and unipolar transistors.

Prerequisite: ECEN 656 or approval of instructor.**ECEN 674/PHYS 674 Introduction to Quantum Computing****Credits 3. 3 Lecture Hours.**

Introduces the quantum mechanics, quantum gates, quantum circuits and quantum hardware of potential quantum computers; algorithms, potential uses, complexity classes, and evaluation of coherence of these devices.

Prerequisites: MATH 304, PHYS 208.**Cross Listing:** PHYS 674/ECEN 674.

ECEN 675 Integrated Optoelectronics**Credits 3. 3 Lecture Hours.**

Light propagation and interactions in anisotropic media; electrooptic and acoustooptic effects; passive and active guided-wave devices; fabrication and characterization.

Prerequisite: ECEN 464 or equivalent.**ECEN 676 Advanced Computer Architecture****Credits 3. 3 Lecture Hours.**

Design of advanced computers for parallel processing; emphasis on the overall structure; interconnection networks; including single-stage and multi-stage structures; shared memory and message passing architectures; control-flow and demand-driven programming; multithreaded architectures; fine-grain and coarse-grain parallelism; SIMD and MIMD; processor designs for parallel operation.

Prerequisite: ECEN 651 or CSCE 614 or approval of instructor.**ECEN 677 Control of Electric Power Systems****Credits 3. 3 Lecture Hours.**

Modeling, analysis and real-time control of electric power systems to meet the requirements of economic dispatch of voltage and power.

Prerequisite: Approval of instructor.**ECEN 679 Computer Relays for Electric Power Systems****Credits 3. 3 Lecture Hours.**

Real-time digital computer application to protective relaying; extensive overview of digital protection algorithms; latest technological advancements as microprocessor-based relays, fiber-optic communication systems, unconventional instrument transformers, dynamic testing tools and methodologies.

Prerequisite: Approval of instructor.**ECEN 680/CSCE 680 Testing and Diagnosis of Digital Systems****Credits 3. 3 Lecture Hours.**

The theory and techniques of testing VLSI-based circuits and systems, and design for testability.

Prerequisites: ECEN 220 or ECEN 248 or equivalent; ECEN 350/CSCE 350 or CSCE 321 or equivalent.**Cross Listing:** CSCE 680/ECEN 680.**ECEN 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussion of current research and of selected published technical articles. May be taken four times for credit.

Prerequisite: Graduate classification in electrical and computer engineering.**ECEN 683 Wireless Communication Systems****Credits 3. 3 Lecture Hours.**

Wireless applications, modulation formats, wireless channel models and simulation techniques, digital communication over wireless channels, multiple access techniques, wireless standards.

Prerequisite: ECEN 646 or approval of instructor.**ECEN 684 Professional Internship****Credits 1 to 4. 1 to 4 Other Hours.**

Engineering research and design experience at industrial facilities away from the Texas A&M campus; design projects supervised by faculty coordinators and personnel at these locations; projects selected to match student's area of specialization.

Prerequisites: Graduate classification and one semester of coursework completed.**ECEN 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Research problems of limited scope designed primarily to develop research technique.

ECEN 686 Electric and Hybrid Vehicles**Credits 3. 3 Lecture Hours.**

Fundamental concepts of electric and hybrid-electric vehicles introduced, component requirements and system design methodologies discussed; vehicle system analysis and simulation methods presented.

Prerequisite: Graduate classification or approval of instructor.**ECEN 687 Introduction to VLSI Physical Design Automation****Credits 3. 3 Lecture Hours.**

Algorithms and techniques for VLSI design automation, including basic optimization techniques, high level synthesis, logic synthesis/verification, physical design, timing verification and optimization.

Prerequisite: ECEN 248.**ECEN 688 IC MEMS and Sensor Fabrication****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Fundamental unit processes for the fabrication of silicon IC's and extension of these processes to the specialized micro-machining operations used for MEMS and sensor fabrication; basic process operations used in the laboratory to build simple IC structures; devices then characterized.

Prerequisite: ECEN 325, ECEN 370, or approval of instructor.**ECEN 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Advanced topics of current interest in electrical engineering. May be repeated for credit.

Prerequisite: Approval of instructor.**ECEN 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

ECEN 694 Nanobiotechnology**Credits 3. 3 Lecture Hours.**

Introduction to advances in nanobiotechnology; includes fabrication of micro or nano structures, molecular manipulation, medical diagnostic and treatment options, nano scale machines such as molecular motors for drug delivery.

Prerequisite: Graduate classification; approval of instructor.**ECEN 696 Erbium-Doped Amplifier: Technology and Applications****Credits 3. 3 Lecture Hours.**

Rate equations and modeling of rare-earth transitions. Spontaneous stimulated emission. Pump requirement for erbium-doped fiber. Erbium-doped fiber design and simulation using commercial dispersion compensation issues, polarization effects, self-phase modulation, cross-phase modulation. Raman and Brillouin effects in optical fibers.

Prerequisite: ECEN 370 or approval of instructor.**ECEN 699 Advances in VLSI Logic Synthesis****Credits 3. 3 Lecture Hours.**

Logic representation, manipulation, and optimization; combinational and sequential logic; Boolean function representation schemes; exact and heuristic two-level logic minimization; multi-valued logic representation and manipulation; multi-level logic representation and minimization; testing; technology mapping.

Prerequisites: Approval of instructor and graduate classification.

ECEN 704 VLSI Circuit Design**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Analysis and design of monolithic analog and digital integrated circuits using NMOS, CMOS and bipolar technologies; device modeling; CAD tools and computer-aided design; design methodologies for LSI and VLSI scale circuits; yield and economics; test and evaluation of integrated circuits.

Prerequisite: Graduate classification.

ECEN 710 Switching Power Supplies**Credits 3. 3 Lecture Hours.**

Operating principles of switching power supplies; analysis and in-depth design of several types of switching regulators including buck, boost, forward, flyback, half and full bridge switching regulator analysis; elements of transformer and magnetic design; state space analysis and feedback loop stabilization principles; application of these in the industry.

Prerequisites: ECEN 438 or equivalent, approval of instructor.

ECEN 711 Sustainable Energy and Vehicle Engineering**Credits 3. 3 Lecture Hours.**

Forms of sustainable and unsustainable energy resources and the basic system engineering limits of each; specific problems of sustainable transportation energy on the bases of vehicle and power engineering; issues related to energy efficiency, life cycle analysis, global warming, pollution, economic and social considerations.

Prerequisite: Graduate classification in engineering.

ECEN 712 Power Electronics for Photovoltaic Energy Systems**Credits 3. 3 Lecture Hours.**

Sustainable energy sources such as photovoltaic, fuel cell, wind, and others require power electronics to perform energy conversion and conditioning in order to convert their native form of electrical generation to a format compatible with the ac utility grid; exploration of the salient electrical characteristics of solar photovoltaic sources, the requirements for grid-connection and the power electronic circuits and controls needed to perform the interconnection and control.

Prerequisite: ECEN 438 or instructor approval.

ECEN 714 Digital Integrated Circuit Design**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Analysis and design of digital devices and integrated using MOS and bipolar technologies and computer aided simulation.

Prerequisite: Graduate classification.

ECEN 715 Physical and Economical Operations of Sustainable Energy Systems**Credits 3. 3 Lecture Hours.**

Operational issues for sustainable electric energy systems; basic relevant topics in engineering, optimization and economic concepts; modular view of individual electric energy processing components; physical and market operations in electricity industry in support of sustainable energy integration; computer simulations and demonstrations to create and evaluate examples of power systems.

Prerequisite: ECEN 214, ECEN 420, ECEN 460 or approval of instructor.

ECEN 720 High-Speed Links Circuits and Systems**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

System and circuit design of high-speed electrical and optical link systems; includes channel properties, communication techniques, and circuit design of drivers, receivers, equalizers, and synchronization systems; project consists of link design with a statistical bit error rate simulator and interface circuit design.

Prerequisite: ECEN 474.

ECEN 730 CMOS RFIC Engineering**Credits 3. 3 Lecture Hours.**

Introduction to CMOS radio-frequency integrated circuits (RFICs) and wireless systems and networks; theory, analysis and design of RFICs using CMOS technologies; CMOS fundamentals (device, principle, models); scattering parameters, transmission lines, distributed structures, lumped elements, impedance matching, RFIC layout, processing, test, amplifiers, oscillators, mixers; CAD programs for CMOS RFIC design.

Prerequisites: ECEN 322 and graduate classification.

ECEN 735 Electromagnetic Field Theory**Credits 3. 3 Lecture Hours.**

Methods in wave propagation, diffraction and scattering analysis, including surface waves, creeping waves, surface plasmons and complex environments; applications to macroscopic and nano technology such as optical wave propagation in materials and wireless device wave propagation.

Prerequisite: ECEN 635 or equivalent.

ECEN 738 Power Electronics**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Electric power conditioning and control; characteristics of solid state power switches; analysis and experiments with AC power controllers, controlled rectifiers, DC choppers and DC-AC converters; applications to power supplies, airborne and spaceborne power systems.

Prerequisite: Graduate classification or approval of instructor.

ECEN 741 Electronic Motor Drives**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Application of semiconductor switching power converters to adjustable speed DC and AC motor drives; steady state theory and analysis of electric motion control in industrial, robotic and traction systems; laboratory experiments in power electronic motor drives and their control.

Prerequisite: Graduate classification.

ECEN 742 DSP Based Electromechanical Motion Control**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Overview of energy conversion and basic concepts on electromechanical motion devices; different control strategies including the solid-state drive topologies; electromechanical motion device and DSP control implementation discussed and implemented in the lab.

Prerequisite: Graduate classification or approval of instructor.

ECEN 748 Data Stream Algorithms and Applications**Credits 3. 3 Lecture Hours.**

Study of algorithms to sample, sketch and summarize high rate data streams, including applications to measuring internet traffic and services and transactional graph streaming data; quantify the trade-offs between computational and storage resources and accuracy that are inherent in these methods.

Prerequisites: Graduate classification; ECEN 303 or previous undergraduate or graduate course in probability or statistics; or approval of instructor.

ECEN 749 Microprocessor Systems Design**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Introduction to microprocessors; 16/32 bit single board computer hardware and software designs; chip select equations for memory board design, serial and parallel I/O interfacing; ROM, static and dynamic RAM circuits for no wait-state design; assembly language programming, stack models, subroutines, and I/O processing.

Prerequisite: Graduate classification.

ECEN 750 Design and Analysis of Communication Networks**Credits 3. 3 Lecture Hours.**

Analytical approach to understanding resource allocation on the Internet; study the system in a global sense, and use a deterministic approach to study congestion control protocols; study individual queues and routers, and use a stochastic approach to understanding system performance.

Prerequisite: ECEN 646 or some probability background.

ECEN 751 Computational Methods for Integrated System Design**Credits 3. 3 Lecture Hours.**

Integrated circuit design in a computational standpoint; VLSI circuit simulation, interconnect modeling and analysis, design and analysis of IC subsystems, parallel computing techniques for complex system design.

Prerequisite(s): ECEN 454, ECEN 474 or equivalent.

ECEN 752 Advances in VLSI Circuit Design**Credits 3. 3 Lecture Hours.**

Gate and wire delays, CMOS transistors, DC and AC characteristics, VLSI fabrication, Static, Dynamic, Pass-gate and PLA implementation styles, SOI and GaAs technology, DRAM, SRAM and FLASH memory design, leakage and dynamic power, sub-threshold computation, clocking, transmission lines, packaging, off-chip IO, process variation and compensation, radiation tolerance.

Prerequisite(s): Graduate classification or Instructor approval.

ECEN 753 Theory and Applications of Network Coding**Credits 3. 3 Lecture Hours.**

Fundamentals of network coding including concepts, models, linear and non-linear codes, code design, random and deterministic codes; wireless network coding; network coding for storage; practical implementations; current research trends.

Prerequisite: Graduate classification or approval of instructor.

ECEN 754 Optimization for Electrical and Computer Engineering Applications**Credits 3. 3 Lecture Hours.**

Principles of optimization including linear and nonlinear optimization as well as electrical and computer engineering applications in signal estimation, routing in communication networks, flows in wireless networks, wafer fabrication plants, and economic dispatch in power systems.

Prerequisites: MATH 304 or MATH 309 or MATH 311; MATH 251 or graduate classification.

ECEN 755 Stochastic Systems**Credits 3. 3 Lecture Hours.**

Principles of stochastic systems including performance evaluation, estimation, control, scheduling, identification and adaptation, as well as electric and computer engineering applications; includes applications in communication networks and control.

Prerequisites: MATH 411; approval of instructor and graduate classification.

ECEN 756 Game Theory**Credits 3. 3 Lecture Hours.**

Fundamentals of game theory, strategic behavior and concepts of equilibria; utilization of concepts in realistic application scenarios, as well as algorithms and learning methods to compute such equilibria.

Prerequisite: Graduate classification.

ECEN 757/CSCE 678 Distributed Systems and Cloud Computing**Credits 3. 3 Lecture Hours.**

Fundamental concepts of distributed systems with a focus on the emerging application of cloud computing; design, analyze, and optimize distributed systems; includes MapReduce, synchronization, peer-to-peer systems, election, distributed agreement, replication, job assignment.

Cross Listing: CSCE 678/ECEN 757.

ECEN 758 Data Mining and Analysis**Credits 3. 3 Lecture Hours.**

Broad overview of data mining, integrating related concepts from machine learning and statistics; exploratory data analysis, pattern mining, clustering and classification; applications to scientific and online data.

Cross Listing: CSCE 676 and STAT 639.

ECEN 759/CYBR 630 Hardware Security**Credits 3. 3 Lecture Hours.**

Cryptography and cryptographic algorithms such as AES, DES and others; techniques to optimize hardware implementation of cryptographic systems; different types of side-channel attacks and countermeasures; supply-chain vulnerabilities including hardware Trojans, counterfeits, IP piracy and reverse engineering; security modules for system-on-chip; physical unclonable functions.

Prerequisites: ECEN 468, ECEN 474, or approval of instructor.

Cross Listing: CYBR 630/ECEN 759.

ECEN 760 Introduction to Probabilistic Graphical Models**Credits 3. 3 Lecture Hours.**

Broad overview of various probabilistic graphical models, including Bayesian networks, Markov networks, conditional random fields, and factor graphs; relevant inference and learning algorithms, as well as their application in various science and engineering problems will be introduced throughout the course.

Prerequisites: Undergraduate level probability theory; basic programming skill in any programming language (C, C++, Python, Matlab, etc.).

ECEN 761 Biosensors Lab**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Biosensors Lab is a hands on experience in basic concepts of biosensing and how to make miniaturized biosensors; various application examples associated with these sensing principles.

Prerequisite: Approval of instructor.

ECEN 762 Advanced Ultrasound Imaging Techniques**Credits 3. 3 Lecture Hours.**

Fundamental concepts at the basis of ultrasound imaging including mathematical analysis of wave propagation, scattering of ultrasound in biological tissues, electronic transducer arrays for the beam forming, models of the received signals and signal and image processing methods for medical ultrasound imaging of tissues; focus on the fundamental understanding of advanced ultrasound imaging methods and techniques and their applications; state-of-the-art ultrasound imaging techniques including ultrasound contrast agents and harmonic imaging, 3D and 4D imaging, advanced Doppler imaging methods, 2D arrays, C-MUT and HIFU technologies.

Prerequisite: Approval of instructor.

ECEN 763/BMEN 627 Magnetic Resonance Engineering**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Design, construction and application of instrumentation for MR imaging; fundamentals of the architecture of an MR spectrometer and the gradient subsystem used for image localization; emphasis on the radiofrequency sensors and systems used for signal generation and reception.

Prerequisites: BMEN major; graduate classification or approval of instructor.

Cross Listing: BMEN 627/ECEN 763.

ECEN 764 Medical Imaging**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Physics and signals in medical imaging systems; focus on magnetic resonance imaging, x-ray computer tomography, ultrasonography, nuclear medicine imaging and optical imaging; includes system architecture, source generation, energy-tissue interaction, image formation and clinical examples.

Prerequisite: ECEN 314 or equivalent, or approval of instructor.

ECEN 765 Machine Learning with Networks**Credits 3. 3 Lecture Hours.**

Scientific analysis of large-scale data; introduction to advanced methods that are designed to analyze structured data represented as networks.

Prerequisite: Approval of instructor.

ECEN 766 Algorithms in Structural Bioinformatics**Credits 3. 3 Lecture Hours.**

Fundamental concepts, modeling techniques, and computational algorithms in structural bioinformatics for algorithm development and application; focus on algorithm perspective involving optimization and machine learning; essential for those without prior domain knowledge.

Prerequisite: Approval of instructor.

ECEN 767 Harnessing Solar Energy: Optics, Photovoltaics and Thermal Systems**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Solar radiation characteristics and measurement; optical coatings including reflection, transmission, absorption and emissivity; concentrating optics, tracking and etendue limit; photovoltaic cells, modules and systems overview; introduction to solar thermal systems.

Prerequisite: Graduate classification or approval of instructor.

ECEN 768 Bioelectronics**Credits 3. 3 Lecture Hours.**

Basic biological systems from individual neuron to neural networks in the brain/nervous system by leveraging engineering principles, basic electrical circuit theory and electromagnetic theory; applications include biosensors including electrodes, chemical, mechanical and optical sensors and bioelectronic systems.

ECEN 769/MSEN 660 Materials Informatics**Credits 3. 3 Lecture Hours.**

Use of informatics approaches to establish quantitative structure-property relations (QSPRs) in materials and materials systems; basic concepts of QSPRs and probability, supervised learning, unsupervised learning, optimal prediction and applications in materials discovery.

Prerequisite: Approval of instructor.

Cross Listing: MSEN 660/ECEN 769.

ECEN 770 Organic Semiconductor**Credits 3. 3 Lecture Hours.**

Organic semiconductors are new semiconducting materials with huge application potentials; designed to help understand the material properties of organic semiconductors and the operation principles of organic electronic devices; gain broad knowledge in organic semiconductors, from the structure-property relationship to the design and optimization of organic devices and systems.

Prerequisite: Approval of instructor.

ECEN 771 Fluctuations and Noise Electronics**Credits 3. 3 Lecture Hours.**

Introduction to the research of Noise and Fluctuations; Noise and Fluctuations in electronics and other systems include virtually all scientific fields, including secure and non-secure communications, microprocessors, quantum information, mesoscopic systems, chemical sensing, corrosion diagnostics, neuro- and membrane-biology, biomedicine, etc.

Prerequisite: Approval of instructor.

ECEN 772 Introduction to Microelectromechanical Devices and Systems**Credits 3. 3 Lecture Hours.**

Provides a broad overview of the past and current developments in the emerging area of MEMS (microelectromechanical systems); discusses the fundamental working principles, designs and fabrication techniques; consists of several special topics, discussing the latest important applications in different fields.

Prerequisite: Consent of instructor.

ECEN 773 Introduction to Nanophotonics**Credits 3. 3 Lecture Hours.**

Photonic bandgap optical circuitry, photonic crystal fiber; visible to infrared semiconductor quantum lasers; semiconductor quantum dots; plasmonic field enhancement, plasmonic optical circuitry, sub-wavelength optical lithography, negative refractive index and sub-wavelength optical imaging; nano-structure characterization techniques, atomic force microscopy, near-field optical microscopy, scanning and transmission electron microscopy.

Prerequisite: Approval of Instructor.

ECEN 774 Laser Principles and Applications**Credits 3. 3 Lecture Hours.**

Quantum properties of light and matter as related to optical and optoelectronic devices such as lasers and their applications; Maxwell's equations, classical optics and optical devices; basic quantum theory of light and atoms; laser resonators and short pulse generation.

ECEN 777 Photonics: Fiber and Integrated Optics**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Optical power and spectral measurements of singlemode and multimode optical fibers, hands-on arc fusion splicing, lasers, amplifiers, interferometers, photodetectors, integrated optics, fiber-optics, fiber-optic devices, optical modulators.

Prerequisites: Equivalent of ECEN 322 and ECEN 370 or approval of instructor.

ECMT - Econometrics

ECMT 638 Applied Time Series Econometrics

Credits 3. 3 Lecture Hours.

Examines econometric models and methods used to study time series data; emphasis on applications in macroeconomics; principles of estimation techniques and inference in the context of serially correlated and potentially large datasets as well as on the identification challenges in macroeconomic models.

Prerequisites: Graduate classification.

ECMT 660 Mathematical Economics I

Credits 3. 3 Lecture Hours.

Use of selected types of mathematical tools in economic theory.

Prerequisites: Graduate classification; enrollment in 5-Year BS/MS-ECON program; or approval of instructor.

ECMT 669 Fundamental Mathematics for Economists

Credits 2. 2 Lecture Hours.

Mathematics of nonlinear programming; applications to micro-theoretic models of demand and production; fundamental results from matrix theory and multivariate differential calculus; systems of differential equations and stability analysis and their economic applications.

ECMT 670 Econometric Analysis of Financial Data

Credits 3. 3 Lecture Hours.

Predictability of asset returns, test of random walk hypothesis, the microstructure of securities markets, event analysis, the CAPM and arbitrage pricing theory, the term structure of interest rates, dynamic models of economic equilibrium and nonlinear financial models; provides an accessible combination of theory and practice.

Prerequisites: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.

ECMT 673 Economic Analytics

Credits 3. 3 Lecture Hours.

Analysis of large household, corporate and financial data involving empirical modeling and SAS programming for prediction of economic decisions and outcomes; lecture, discussion and team project presentation format.

Prerequisites: Graduate classification and enrollment in the master's program in economics.

ECMT 674 Economic Forecasting

Credits 3. 3 Lecture Hours.

Empirical application of econometric techniques to prediction in economics; model building and specification; examination of various modern forecasting techniques.

Prerequisites: Graduate classification; must be enrolled in the MS program in the department of economics; or approval of instructor.

ECMT 675 Econometrics I

Credits 3. 3 Lecture Hours.

Empirical distributions of economic variables; elementary discrete and continuous distributions expressing econometric hypotheses, distributions of estimators and test statistics.

Prerequisites: MATH 151 and MATH 152 or approval of instructor.

ECMT 676 Econometrics II

Credits 3. 3 Lecture Hours.

Use of statistics in economic theory as device for testing hypotheses, formulation of concepts and economic forecasting; regression analysis in economics problems, heteroskedasticity, autocorrelation, distributed lags, regressions with lagged dependent variable, dummy variables and in introduction to multi-equations economics models.

Prerequisite: ECMT 675 or equivalent.

ECMT 677 Applied Microeconometrics

Credits 3. 3 Lecture Hours.

Estimation methods applied to economic problems; techniques include single and simultaneous equations models; general linear model in matrix form; tests of linear restrictions; Wald, Likelihood Ratio and Lagrange Multiplier tests; seemingly unrelated regressions, simultaneous equations identification and estimation; missing observations, errors in variables and non-linear estimation in economics problems.

Prerequisites: ECMT 675 and ECMT 676; STAT 610 or approval of instructor.

ECMT 678 Nonparametric Econometrics

Credits 3. 3 Lecture Hours.

Continuation of ECMT 677. Estimation methods applied to economic problems; techniques include qualitative limited dependent variables; pooled time-series and cross-section data; instrumental variables in economics problems. May repeated for credit.

Prerequisite: ECMT 677.

ECMT 679 Time Series Econometrics

Credits 3. 3 Lecture Hours.

Advanced topics in time series econometrics, including ARMA models, unit roots and cointegration.

Prerequisite: ECMT 677.

ECMT 680 Financial Econometrics

Credits 3. 3 Lecture Hours.

Basic concepts of financial engineering and elementary theory of stochastic processes and continuous time models; selected topics related to current financial econometrics research.

Prerequisites: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.

ECON - Economics

ECON 603 Public Economics I

Credits 3. 3 Lecture Hours.

Economics of taxation and public spending; theoretical and empirical analysis of the shifting and incidence of income, commodity and property taxes; models of optimal taxation and public spending; analysis of taxation and spending in a federal system of government.

Prerequisite: Approval of instructor.

ECON 604 Public Economics II

Credits 3. 3 Lecture Hours.

Economics of collective action; theoretical and empirical analysis of externalities; externalities and public policy; the demand and supply of public goods; economic analysis of alternative systems of public choice; models of bureaucratic behavior.

Prerequisite: ECON 629 or approval of instructor.

ECON 607 Foundations of Microeconomic Theory

Credits 3. 3 Lecture Hours.

Examination of positive and normative analysis in economic theory; emphasis on policy applications of the theory.

Prerequisites: MATH 131 or equivalent; ECON 323 or equivalent; or approval of instructor.

ECON 609 Labor Economics I**Credits 3. 3 Lecture Hours.**

Valuation and allocation of human resources; labor supply of households; labor supply over the life-cycle; determination of wages; human capital; migration; education; labor markets; population; use of the testable implications of theory and of evidence to explain observed labor market behavior.

Prerequisite: ECON 629 or equivalent.**ECON 610 Labor Economics II****Credits 3. 3 Lecture Hours.**

Selected topics in labor markets; unemployment; earnings differentials; effects of occupational licensing; trade unions; income distribution; military manpower and the draft; effects of minimum wage and equal pay provisions; effects of welfare programs; the professional athlete's labor market and others; developing and analyzing empirical problems.

Prerequisite: ECON 629 or equivalent.**ECON 611 Foundations of Macroeconomic Theory****Credits 3. 3 Lecture Hours.**

Development of modern static national income analysis from general equilibrium system; roles of fiscal and monetary policy in promoting economic stability.

Prerequisites: ECON 323 and ECON 410; or approval of instructor.**ECON 612 Money, Banking and Financial Markets****Credits 3. 3 Lecture Hours.**

Role of financial markets and institutions in the allocation of resources in the real economy; the financial regulatory and policy infrastructure underlying financial activity to promote efficiency in asset valuation, risk management and economic growth.

Prerequisite: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 614 Economics of Microfinance****Credits 3. 3 Lecture Hours.**

Analysis of recent research in financial markets in developing countries with a primary emphasis on microfinance; micro-asymmetries involved in lending; financial impact studies; the macro-economic literature on financial development and growth.

Prerequisites: ECON 607 or equivalent; graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 617 Economics of the Multinational Firm****Credits 3. 3 Lecture Hours.**

Economics of the multinational firm, taking a firm-level approach to the study of international investment; structured around recent papers from the frontier of international trade research; examination of trends in multinational activity and exploration of the reasons behind decisions to invest abroad including understanding different types of foreign direct investment; the impact of multinational firms and how government policies impact foreign direct investment (FDI), including an overview of transfer pricing and the arm's length principle.

Prerequisites: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 618 Behavioral Financial Economics****Credits 3. 3 Lecture Hours.**

Describes how individuals and firms make financial decisions that deviate from those predicted by traditional financial or economic theory; examines how the insights of behavioral finance complement the traditional finance paradigm.

Prerequisites: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 629 Microeconomic Theory I****Credits 3. 3 Lecture Hours.**

Core ideas in theoretical microeconomics; theory of consumer and firm; theory of competitive output and factor markets.

Prerequisite: Approval of instructor.**ECON 630 Microeconomic Theory II****Credits 3. 3 Lecture Hours.**

Advanced treatment of consumer and production theory; game theory; general equilibrium and welfare analysis.

Prerequisites: ECON 629; ECMT 660.**ECON 631 Microeconomic Theory III****Credits 3. 3 Lecture Hours.**

Advanced theoretical microeconomics; comprehensive study of consumer and producer theory, general equilibrium and welfare, and failures of the competitive model.

Prerequisites: ECON 629 and ECON 630.**ECON 632 Microeconomic Theory IV****Credits 3. 3 Lecture Hours.**

Advanced topics in game theory; repeated games and reputation, strategic information transmission; learning and evolution; models of bargaining and networks.

Prerequisites: Graduate classification; ECON 629 and ECON 630 or approval of instructor.**ECON 633 Energy Markets and Policy****Credits 3. 3 Lecture Hours.**

Economics of energy markets and energy regulation with emphasis on implications for optimal energy policy; sectors include gasoline, oil, electricity, natural gas, renewables, nuclear; economic theory integrated with empirical applications from American and international experience; new energy markets, energy trading, and interaction with environmental policy.

Prerequisite: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 635 Advanced Macroeconomics I****Credits 3. 3 Lecture Hours.**

Traditional and modern theories of money; general equilibrium systems and role of money in determination of prices, interest rate, income and employment.

Prerequisite: ECON 636.**ECON 636 Macroeconomic Theory I****Credits 3. 3 Lecture Hours.**

Theory of consumption, investment, money, interest, inflation and employment.

Prerequisite: ECON 410 or ECON 611.**ECON 637 Advanced Macroeconomics II****Credits 3. 3 Lecture Hours.**

Effect of monetary policy on aggregate economic activity and distribution of resources; effectiveness of various policies; optimal policy in light of various institutional restrictions that exist.

Prerequisite: ECON 635.**ECON 646 Macroeconomic Theory II****Credits 3. 3 Lecture Hours.**

Dynamic models, open economies, disequilibrium analysis, unemployment and inflation; traditional macro models and recent developments in macro theory.

Prerequisite: ECON 636.

ECON 649 Industrial Organization I**Credits 3. 3 Lecture Hours.**

Industry structure, conduct and performance described and analyzed with tools of microeconomics.

Prerequisite: Approval of instructor.**ECON 650 Industrial Organization II****Credits 3. 3 Lecture Hours.**

Behavior of markets operating under conditions of imperfect information; construction and scientific evaluation of models designed to explain industry performance.

Prerequisite: ECON 649 or approval of instructor.**ECON 652 International Trade Theory****Credits 3. 3 Lecture Hours.**

Classical and neoclassical models of international trade. International price formation, patterns of trade and gains from exchange; specialization and comparative advantage; factor proportions, factor prices and the Heckscher-Ohlin theorem; foreign trade and growth; tariffs, customs unions and commercial policy.

Prerequisite: ECON 630 or approval of instructor.**ECON 655 Experimental Economics****Credits 3. 3 Lecture Hours.**

Experimental methods in choice behavior experiments, survey research, planned economic environments and animal experiments.

Prerequisite: Approval of instructor.**ECON 656 Field Experiments in Economics****Credits 3. 3 Lecture Hours.**

Methods underlying the design and implementation of field experiments and randomized controlled trials; includes a survey of some of the empirical literature using these methods.

Prerequisites: ECON 607 and ECMT 677, or equivalent.**ECON 659 Behavioral Game Theory****Credits 3. 3 Lecture Hours.**

Static and dynamic games of complete and incomplete information and other advanced topics in game theory.

ECON 663 International Transfer Pricing**Credits 3. 3 Lecture Hours.**

Valuation of cross-border transactions between units of a multinational enterprise; includes internal and external motivations for transfer pricing, managerial and economic approaches; estimates of transfer manipulation, arm's length standard, U.S. and OECD rules and procedures, tax court cases and ethical dilemmas.

Prerequisite: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**Cross Listing:** INTA 663 and MGMT 663.**ECON 668 Decisions Under Risk and Uncertainty****Credits 3. 3 Lecture Hours.**

The mean-variance and expected utility decision models; the use of risk models in asset valuation, financial decision-making and economic analysis; portfolio choice, insurance demand, saving, investment and consumption decisions.

Prerequisites: ECON 607 or equivalent; graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 675 Capstone for Financial Economics/Financial Econometrics****Credits 3. 3 Lecture Hours.**

Integration of the knowledge gathered in coursework including micro- and macro-economics, financial economics, econometrics, forecasting, and other analytical tools; production of major group research paper utilizing professional literature, both printed and electronic, and published data.

Prerequisites: Graduate classification; 2 year master's student enrolled in the master's program in the department of economics.**ECON 680 Financial Economics****Credits 3. 3 Lecture Hours.**

Advanced theory of dynamic asset pricing utilizing the Economics of risk and uncertainty within a general equilibrium framework; stochastic calculus applications to the analysis of asset markets; theoretical foundations and empirical testing.

Prerequisites: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**ECON 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

Opportunities to put economics learned in the classroom into practice at government or industry facilities; design projects supervised by faculty coordinators and personnel at these locations; projects selected to match student's area of specialization.

Prerequisites: Graduate classification and enrolled in the master's program in the department of economics.**ECON 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Directed individual instruction in selected problems in economics not related to thesis or dissertation.

Prerequisites: Graduate major or minor in economics; approval of instructor.**ECON 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of economics. May be repeated for credit.

Prerequisite: Approval of department head.**ECON 690 Theory of Economic Research****Credits 3. 3 Lecture Hours.**

Design of research experiments in various subfields of economics, and evaluation of research results with the aid of examples taken from the current scientific literature.

ECON 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Thesis research.

EDAD - Educational Administration

EDAD 601 College Teaching**Credits 3. 3 Lecture Hours.**

Initial preparation for instruction at the college level; focuses on the basic skills, strategies and issues common to university teaching. Open to graduate students committed to teaching in any area at the college level.

EDAD 602 The Community College**Credits 3. 3 Lecture Hours.**

Theoretical and practical knowledge of the American community college with emphasis on the history, purposes, programs, and personnel within these institutional contexts.

Prerequisite: Graduate classification.

EDAD 603 Advanced Student Development Theory**Credits 3. 3 Lecture Hours.**

Advanced study of the nature, needs and characteristics of American college students; developmental tasks, peer group relations and impact of college environment on student development; research from behavioral sciences.

Prerequisite: EDAD 669; graduate classification.**EDAD 605 School Principalship****Credits 3. 3 Lecture Hours.**

Role of the principle in organization and administration of prekindergarten through grade 12 schools; management of instruction, education program planning, legal situations, evaluation, scheduling, and programs.

Prerequisite: Graduate classification.**EDAD 606 Instructional Leadership Development Training****Credits 3. 3 Lecture Hours.**

Using an interactive format and data from a simulated Texas school, students will become adept in basic tenets and requirements of the principalship including 1) data-driven decision-making, 2) curriculum, instruction, and assessment; 3) supervision; 4) professional development; 5) organizational management; and 6) community partnerships and communication.

Prerequisite: Graduate classification.**EDAD 607 Strategic Management of Technology in Educational Systems****Credits 3. 3 Lecture Hours.**

Provides a systemic approach to leadership in the management of technology for school districts and campuses and enables them to model effective utilization of technology.

Prerequisite: Graduate classification.**EDAD 608 K-12 School Finance and Budgeting****Credits 3. 3 Lecture Hours.**

Language of education finance and budgeting; purposes and uses of policy and management strategies; traditions of framing research questions and designing studies; accepted procedures for generating, analyzing, and interpreting issues related to school finance and budgeting administration.

Prerequisite: Graduate classification.**EDAD 609 Public School Laws****Credits 3. 3 Lecture Hours.**

Constitutional provisions, statutory laws, court decisions and regulations governing public schools with special reference to Texas and federal relationships.

EDAD 610 Higher Education Law**Credits 3. 3 Lecture Hours.**

Legal aspects of administration in institutions of higher education; statutes and case law related to liability, due process, student rights, admission, employee relations and property use.

Prerequisite: Graduate classification.**EDAD 611 Higher Education Business and Finance****Credits 3. 3 Lecture Hours.**

Business management and financial aspects of administration in higher education; federal and state funding, institutional planning, budgeting and controlling, sources of financial support and business operations in higher education.

Prerequisite: Graduate classification.**EDAD 612 Policy Issues in the Administration of Higher Education****Credits 3. 3 Lecture Hours.**

Examination of conflicting positions on policy issues of importance in higher education and their direct implications for participants.

Prerequisite: Graduate classification.**EDAD 615 School Superintendency****Credits 3. 3 Lecture Hours.**

Examination of the role of the superintendent of schools as the chief educational officer of the local school district; major emphasis on the functions and relationships of the superintendent.

Prerequisite: Graduate Classification.**EDAD 616 Administration of Staff Personnel****Credits 3. 3 Lecture Hours.**

Personnel organization and administration in school systems; relationship of individual to organization; organizational health, staffing, remuneration, appraisal, ethics, security, inservice and negotiations.

EDAD 617 African American School Desegregation**Credits 3. 3 Lecture Hours.**

History of African American education through the lens of school desegregation; Brown v. Board of Education decision, including the conditions and actions that led to the ruling; the ensuing era of implementation; relevance of Brown for our schools today.

Prerequisite: Graduate classification.**EDAD 618 Educational Administration in Cross Cultural Environments****Credits 3. 3 Lecture Hours.**

Designed to provide educational administrators insights and background into the life styles, values and aspirations of minority Americans as related to the administrative process.

EDAD 619 Contemporary Dimensions of Administering Urban Schools**Credits 3. 3 Lecture Hours.**

Causes and consequences of racial and socio-economic isolation, impact of school desegregation, urban school politics, alternatives for urban schools, decentralization, community control, urban population trends and housing patterns.

EDAD 620 Educational Program Evaluation**Credits 3. 3 Lecture Hours.**

Theory and practice of evaluation of instructional programs including research methods and design strategies to measure program outcomes; skills to evaluate personnel and projects included as components of evaluation models and management of educational evaluation functions. Open to all graduate students in education.

EDAD 621 Futurism and Global Change**Credits 3. 3 Lecture Hours.**

Intriguing ideas, concepts and challenges for the field of futurism and planning in a global setting; community and social educational planning techniques and future methodologies.

EDAD 622 Designing and Managing Quality Educational Systems**Credits 3. 3 Lecture Hours.**

Fundamental theory and principles of quality in the design and management of educational systems; the role of processes in improving educational organizations and in process-based management; principles and techniques of continuous quality improvement and the use of quality tools to understand, analyze and improve educational systems and processes.

Prerequisite: Graduate classification.

EDAD 623 Advanced Fieldwork Methods**Credits 3. 3 Lecture Hours.**

To explore by conducting exemplary field examples, qualitative methods, their strengths and weaknesses; to learn how to keep and utilize ethnographic reflexive journals and methodological logs; and to understand the methodological decision points which indicate one method which may be preferable to another.

Prerequisite: EDAD 690 or approval of instructor.

EDAD 624 Administration of Special Populations and Special Programs**Credits 3. 3 Lecture Hours.**

Administration of special educational programs for special populations of students originating at the national, state and local levels of PreK-12 educational settings.

Prerequisite: Graduate classification.

EDAD 625 Personnel Law**Credits 3. 3 Lecture Hours.**

Legal aspects of personnel administration, personal and academic freedoms, and administration of student discipline in public schools; statutes and case law related to due process, liability, employee rights, student rights and governance.

Prerequisite: Graduate classification.

EDAD 626 Advanced Models for Managing High Performing Educational Systems**Credits 3. 3 Lecture Hours.**

Systems approach to designing and managing quality/high performing educational organizations with emphasis on systems theory, system dynamics and systems modeling; application of the Malcolm Baldrige National Quality Criteria for Performance Excellence as a systemic framework for managing change and achieving high performance in educational organizations.

Prerequisite: EDAD 622.

EDAD 627 Case Studies in Higher Education Administration**Credits 3. 3 Lecture Hours.**

Management of institutions of higher education through case studies, simulations, problem solving exercises, and in-basket activities; analysis, synthesis and evaluation of variables and decisions in administering the academic enterprise; understanding of process and content issues in administering higher education institutions.

Prerequisite: Graduate classification.

EDAD 628 Advanced Legal Issues in Higher Education**Credits 3. 3 Lecture Hours.**

Legal issues associated with student affairs and higher education administration; understand establishment and maintenance of relationship with university attorneys and office of general counsel.

Prerequisites: EDAD 610 or equivalent, graduate classification.

EDAD 630 Site-Based Management of Schools**Credits 3. 3 Lecture Hours.**

Examination of theory and social forces leading to site-based management of schools, establishment of campus leadership teams; setting and monitoring campus goals; interaction with community and social agencies.

Prerequisite: Graduate classification.

EDAD 631 Student Affairs Functions**Credits 3. 3 Lecture Hours.**

Introduction to student affairs administration in higher education programs; includes the history of student affairs administration and the philosophical foundations of student affairs work.

EDAD 635 Administration for Special Services**Credits 3. 3 Lecture Hours.**

To help administrators, counselors, supervisors and teachers develop an understanding of functions, operation and evaluation of special services which support the educational program; individual study of content and on-site evaluations of organization and administration of school services programs.

EDAD 637 Administration of Change in Educational Organizations**Credits 3. 3 Lecture Hours.**

Relationships among individual and group behaviors; roles of administrators; on-site analysis of educational organizations and change principles.

EDAD 638 Developing School-Community Partnerships**Credits 3. 3 Lecture Hours.**

Current educational issues affecting public education; merging and alternative models of community education.

EDAD 639 Foundations of Educational Administration**Credits 3. 3 Lecture Hours.**

Selected historical, philosophical and sociological foundations and developmental dimensions of educational administration.

EDAD 641 Community Education**Credits 3. 3 Lecture Hours.**

Structure, purpose and strategies of community education as they relate to public school administration.

EDAD 650 Professional Development in Higher Education**Credits 3. 3 Lecture Hours.**

An introduction to organizational, faculty and instructional development in higher education; emphasis on research and theoretical foundations and major issues connected with teaching and learning in higher education.

Prerequisite: Graduate classification.

EDAD 651 Education Finance and Economics**Credits 3. 3 Lecture Hours.**

Interdisciplinary applications of historical and current education finance and economics of education research principles and procedures as a means to improve development, analysis, administration evaluation, and improvement of educational programs; policy and organizations.

Prerequisite: Graduate classification.

EDAD 652 Politics of Education**Credits 3. 3 Lecture Hours.**

Interdisciplinary survey course using various fields in political science, comparative government, and American and state history; interrelationships of educational administration to political organizations.

EDAD 653 Organizational Theory and Leadership in Education**Credits 3. 3 Lecture Hours.**

Analyzes the relationship between administrative theory and practice by utilizing the literature in organizational theory and administrative leadership behavior and applying the concepts to administrative practice in PreK-higher educational settings; case studies, debates, simulations and role playing will be utilized to supplement lectures and discussions.

Prerequisite: Master's degree or approval of instructor.

EDAD 654 Organizational Learning**Credits 3. 3 Lecture Hours.**

Focuses on developing the abilities of professionals in educational institutions and other organizations to analyze learning as an organizational function and to develop strategies to enhance organizational learning in those organizations.

EDAD 655 Administration of Higher Education**Credits 3. 3 Lecture Hours.**

Survey of management principles in higher education; functions in delegation, direction, operation, governance and financing applied to postsecondary institutions.

EDAD 658 Assessment and Intervention in Student Affairs**Credits 3. 3 Lecture Hours.**

Understanding of assessment, evaluation and research in student affairs; familiarity with existing assessment instruments for students, services, programs and facilities; understanding importance of maintaining high standards of ethics and integrity in assessment of student affairs.

Prerequisite: Graduate classification or approval of instructor.**EDAD 669 The College Student****Credits 3. 3 Lecture Hours.**

Nature, needs and characteristics of American college students; developmental tasks, peer group relations and impact of college environment on student development. Research from behavioral sciences.

EDAD 670 Student Affairs Administration in Higher Education**Credits 3. 3 Lecture Hours.**

Student affairs administration in higher education; principles, philosophy and major theoretical issues; organization and administration theory.

EDAD 683 Field Practicum in Student Affairs Administration in Higher Education**Credits 1 to 6. 1 to 6 Other Hours.**

Supervised experience in professional employment settings in educational administration; practical experiences and activities in student affairs administration in higher education supervised by departmental faculty.

Prerequisite: Approval of instructor.**EDAD 684 Internship****Credits 1 to 6. 1 to 12 Other Hours.**

Designed to give the prospective educational administrator job related experience under supervision in an educational setting appropriate to the selected roles in administration indicated below. A maximum of 6 hours credit may be earned in each internship. Prior approval required. Selected roles include: a) Community Educator, b) College Administrator, c) School Principal, d) School Superintendent.

Prerequisites: Graduate classification.**EDAD 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of elected problem in field of educational administration.

Prerequisite: Approval of instructor.**EDAD 687 Proseminar: Principles of Professional Practice in Education****Credits 3. 3 Lecture Hours.**

Exploration of major principles and hallmarks of professional practices in the field of education; foundations for effective decision making and leadership in diverse settings examined; team taught.

EDAD 688 Proseminar: Analysis of Critical Issues in Education**Credits 3. 3 Lecture Hours.**

Exploration of a critical issue in the field of education from an interdisciplinary perspective; skills developed in analyzing an issue, exploring its impact upon diverse educational settings, formulating positions and seeking alternative solutions; team taught.

EDAD 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of educational administration. May be repeated for credit.

EDAD 690 Theory of Educational Administration Research**Credits 3. 3 Lecture Hours.**

Theory and design of research and inquiry in various applications of models and research procedures including quantitative analyses, naturalistic inquiry, research design and preparation of research proposals, as they relate to the discipline of educational administration.

Prerequisite: Graduate classification.**EDAD 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

EDAD 692 Professional Study**Credits 1 to 23. 1 to 12 Other Hours.**

Approved professional study of project undertaken for doctor of education degree. Preparation of a record of study summarizing the rationale, procedure and results of the completed project.

Prerequisite: Approval of major advisor.

EDCI - Educ Curriculum & Dev.

EDCI 601 Disciplinary Knowledge and Research in Curriculum and Instruction**Credits 3. 3 Lecture Hours.**

Emphasizes key research and researchers, discipline-specific information, and the initial identification of researchable questions in the field of curriculum and instruction.

Prerequisite: PhD classification in TLAC.**EDCI 602 Cultural Foundations of Education****Credits 3. 3 Lecture Hours.**

Contributions of behavioral sciences applied as analytic tools in solving problems of curriculum and instruction.

EDCI 603 Professional Development: Strategies for Teachers**Credits 3. 3 Lecture Hours.**

Principles of organizational management, instructional design, and change theory in framing professional development programs.

Prerequisite: Graduate classification.**EDCI 604 E-Learning Classroom Management****Credits 3. 3 Lecture Hours.**

Focuses on the development of effective management skills crucial to successful instruction and student achievement; application of theory and research to practice and establish oneself as a professional in the area of classroom management; applicable to elementary, middle level, and secondary school settings.

Prerequisite: Graduate classification.**EDCI 605 Qualitative Research Methods in Curriculum and Instruction****Credits 3. 3 Lecture Hours.**

Theoretical and methodological issues related to qualitative inquiry; discussion of qualitative paradigm's ontological, epistemological, and axiological stances; review and implementation of commonly used qualitative research methods and approaches in curriculum and instruction, including narrative, phenomenology, ethnography, grounded theory, and case study approaches.

Prerequisite: Graduate classification.

EDCI 606 Cognition, Culture and Literacies**Credits 3. 3 Lecture Hours.**

Exploration of complex interrelationships among cognition, culture, and literacies and their implications for education.

Prerequisite: Graduate classification.

EDCI 609 Analysis and Reporting for Records of Study**Credits 3. 3 Lecture Hours.**

Analysis of field-generated and existing data, classroom observations, empirical tests, and discussions; links theoretical and practical educational theory to analyses of qualitative and quantitative data; teacher-leaders interpretation of classroom phenomena using research-based theories for teaching and learning.

Prerequisites: Graduate classification; EPSY 635 or equivalent.

EDCI 610 Second Language Assessment and Development**Credits 3. 3 Lecture Hours.**

Second language assessment and development stressing classroom situations to teach second language acquisition.

Prerequisite: Graduate classification.

EDCI 611 Teaching English as a Second Language**Credits 3. 3 Lecture Hours.**

Translation of theory into practice stressing various methods and techniques in ESL; relationship of language development, culture and conceptual processes to language teaching.

Prerequisite: Graduate classification.

EDCI 612 Bilingual/ESL Content-Area Instruction**Credits 3. 3 Lecture Hours.**

Integrating English language instruction with content-based ESL instruction in science, mathematics and social sciences for non-English speaking students.

Prerequisite: Graduate classification.

EDCI 614 ESL for International and Intercultural Settings**Credits 3. 3 Lecture Hours.**

International and intercultural teaching practices with major emphasis on second language instruction in an international setting.

Prerequisite: Graduate classification.

EDCI 615 Classroom Practice in Adult ESL**Credits 3. 3 Lecture Hours.**

Literacy practice issues in adult ESL literacy leading to assessment, instructional planning, curriculum development and program evaluation.

Prerequisite: Graduate classification.

EDCI 617 Early Childhood Mathematics and Science**Credits 3. 3 Lecture Hours.**

Development of mathematical and science concepts in young children from developmental and scientific perspectives.

Prerequisite: Graduate classification.

EDCI 619 Teaching and Learning Number and Quantity Concepts**Credits 3. 3 Lecture Hours.**

Examination of the content, pedagogy, technology, and research on teaching and learning concepts on number and quantity concepts; discussion of contemporary issues in K-12, standards and assessment.

EDCI 620 Science, Technology, Engineering and Mathematics (STEM) Teaching and Learning**Credits 3. 3 Lecture Hours.**

Examination of integrated and multidisciplinary practice-based pedagogies; building of interdisciplinary bridges among content areas; melding sociocultural and cognitive factors influencing STEM education across K-12 levels; discussion of underrepresented groups binding best practices; development and evaluation of STEM project-based learning.

Prerequisite: Graduate classification.

EDCI 621 Teaching and Learning Space, Dimension, and Measurement Concepts**Credits 3. 3 Lecture Hours.**

Examination of the content, pedagogy, technology, and research on teaching and student learning concepts on space, dimension, and measurement concepts. Discussion of contemporary issues in K-12, standards and assessments.

EDCI 622 Theories of Learning and Teaching Mathematics**Credits 3. 3 Lecture Hours.**

Theoretical bases of the learning and teaching of mathematics, including an examination of the research which supports the theoretical bases.

EDCI 623 Teaching and Learning Pattern and Change Concepts**Credits 3. 3 Lecture Hours.**

Examination of the content, pedagogy, technology, and research on teaching and learning concepts on skills in algebra, functions and calculus. Discussion of contemporary issues in K-12, standards and assessment.

EDCI 624 Assessing Cognitive, Conceptual, and Fluency Structures Related to Learning and Teaching Mathematics**Credits 3. 3 Lecture Hours.**

Examines diagnostic and assessment procedures in mathematics and their potential for identifying problem areas related to children's acquisition of mathematical skills; number and quantity concepts.

Prerequisite: Graduate classification.

EDCI 625 Teaching and Learning Mathematics with Diverse Learners**Credits 3. 3 Lecture Hours.**

Examining diagnostic and assessment procedures in mathematics and their potential for identifying problem areas related to children's acquisition of mathematical skills; number and quantity concepts.

Prerequisite: EDCI 624.

EDCI 627 Teaching and Learning Data Analysis and Uncertainty Concepts**Credits 3. 3 Lecture Hours.**

Examination of the content, pedagogy, technology, and research on teaching and student learning of concepts and skills in probability, statistics, and discrete mathematics; discussion of contemporary issues and K-12 curriculum, standards and assessment.

Prerequisite: Graduate classification.

EDCI 628 Analyzing and Reporting Field Based Research**Credits 3. 3 Lecture Hours.**

Analyze data from classroom observation, empirical tests and interviews; link theoretical and practical mathematics education to analysis of qualitative and quantitative data; equip teacher-leaders and researchers with the resources to interpret classroom phenomena from the research perspective using research-based theories of teaching and learning.

Prerequisite: Graduate classification.

EDCI 629 Historical Analysis of Urban School Reform**Credits 3. 3 Lecture Hours.**

Identifies, analyzes, and applies benchmarks in urban education using research findings.

Prerequisites: Doctoral classification; urban education emphasis or approval of instructor; concurrent enrollment in EDCI 637.

EDCI 630 Urban Education**Credits 3. 3 Lecture Hours.**

Develops a knowledge base in urban education; share and discuss theoretical and conceptual frameworks that permeate city schools; examines historical perspective, pedagogical knowledge and insights of urban educational experiences.

Prerequisites: Graduate classification; urban education emphasis; concurrent enrollment in EDCI 648; or approval of instructor.

EDCI 631 Mentoring the Novice Educator**Credits 3. 3 Lecture Hours.**

To prepare the "teaching" graduate student to observe, evaluate, and reflect upon teaching, mentoring, communication, and supervision skills that support the novice or pre-service teacher with tools necessary to be successful. Examine research related to effective mentoring and supervising strategies and behaviors in environments which support mentoring behavior.

Prerequisite: Graduate classification.

EDCI 632 Program Evaluation in Curriculum and Instruction**Credits 3. 3 Lecture Hours.**

Program evaluation, investigating its purposes and procedures, with attention to settings, personnel and performance; review of standards, principal theories and models; study of histories, political contexts, ethics and the nature of evidence.

Prerequisite: Graduate classification.

EDCI 633 Educator as Learner**Credits 3. 3 Lecture Hours.**

Designed to challenge the graduate learner as one who studies metacognition, working to understand how self and others process learning, maximize application of learning and evaluate the meaning of learning; for students working with others in a role of mentor, supervisor, administrator or coach in a PK-12 setting.

Prerequisite: EDCI 631.

EDCI 634 Reflective Inquiry**Credits 3. 3 Lecture Hours.**

Explores the differences and unique characteristics of moral, multiperspective, collaborative, deliberative, autobiographical, and critical inquiries, and reflective practice related to all forms of inquiry; analyzes the implications of educator growth through reflective practices and the part that reflection plays in developmental growth and professional development.

Prerequisite: Graduate classification.

EDCI 636 Educator as Researcher**Credits 3. 3 Lecture Hours.**

Develops action research skills to enable them to critically analyze insights into the historical, philosophical and social foundations of reflective teaching and leadership in educational environments. Includes an analysis of theories, methodologies, implications and actions related to educational action research.

Prerequisite: Graduate classification.

EDCI 637 Urban Education: Policy and Analysis**Credits 3. 3 Lecture Hours.**

Urban education policy making processes, emphasis on interaction between politics and educational policy.

Prerequisites: Doctoral classification; emphasis in urban education or approval of instructor; concurrent enrollment in EDCI 629.

EDCI 638 Trends in Curriculum and Instruction**Credits 3. 3 Lecture Hours.**

Recent research and development in theories and practices of curriculum and instruction; curriculum innovations, school organization and new instructional media.

EDCI 639 Grant Writing for Professional Development**Credits 3. 3 Lecture Hours.**

Focus on the skills necessary to address a Request for Proposal (RFP) through the development and writing of a competitive funding proposal; attention to the process of identifying foundation, public, and corporate funding opportunities available to support specific programmatic needs/ areas.

Prerequisite: Graduate classification.

EDCI 640 Language/Literacy for Bilingual/Multicultural Young Learners**Credits 3. 3 Lecture Hours.**

Critical multicultural perspectives on the acquisition and development of communication skills by young children who represent bilingual and multicultural backgrounds; critique of language development practices as applied in education settings with young children.

Prerequisite: Graduate classification.

EDCI 641 The African American Learner in Urban Settings**Credits 3. 3 Lecture Hours.**

Supports graduate level students in locating, reviewing, synthesizing, and analyzing research on the African American learner in urban settings.

Prerequisites: Doctoral classification; urban education emphasis; or approval of instructor.

EDCI 642 Multicultural Education: Theory, Research and Practice**Credits 3. 3 Lecture Hours.**

Theory and research that undergirds the discipline of multicultural education by exploring the philosophical, anthropological and psychological theoretical frameworks.

Prerequisite: Graduate classification.

EDCI 643 Teaching in Urban Environments**Credits 3. 3 Lecture Hours.**

Provide educators with historical perspectives, pedagogical knowledge and insights concerning educational experience of teachers and learners in urban environments. Will address cognitive, psychomotor and affective aspects of teaching and learning in urban environments.

Prerequisite: Graduate classification.

EDCI 644 Curriculum Development**Credits 3. 3 Lecture Hours.**

Curriculum development; bases of curriculum design; problems of balance, scope, organization, sequence, selection and articulation.

EDCI 645 Society and Education in World Perspective**Credits 3. 3 Lecture Hours.**

Comparative education; interrelationships among societal institutions and particular roles that education plays in different cultures and political systems.

EDCI 646 Instruction Theory**Credits 3. 3 Lecture Hours.**

Theoretical basis for research and training in instruction; systematic study of existing research on key factors influencing instructional effectiveness. Exploration of interaction among variables of instruction. Doctoral level only.

EDCI 647 Curriculum Theory**Credits 3. 3 Lecture Hours.**

Theoretical basis for curriculum conceptualization, development, evaluation and implementation; value and empirical basis of curriculum decision-making strategies for curriculum change. Doctoral level only.

EDCI 648 Urban Schools and Communities**Credits 3. 3 Lecture Hours.**

Sociological, historical, philosophical, anthropological, and political dimensions of urban schools and community change; issues and contexts grounded in core disciplines of social sciences.

Prerequisite: Graduate classification.**EDCI 650 The Bilingual/Multicultural Young Child in Family and Culture****Credits 3. 3 Lecture Hours.**

Bilingual/multicultural notions of family/culture as foundations for learning/anthropological investigation including cross-cultural comparisons of western concepts of "child" and "parenting;" critique of various constructions of child as learner within family context and monocultural perspectives of "developmentally appropriate" educational practice.

Prerequisite: Graduate classification.**EDCI 651 Bilingual/Multicultural Early Childhood Education****Credits 3. 3 Lecture Hours.**

Historical/current models of early childhood curriculum/methodology as a foundation for the more critical analysis of curriculum as social construction, grounded within values of a particular society or culture; bilingual/multicultural views of early childhood education, curriculum and teaching strategies requiring constant examination.

Prerequisite: Graduate classification.**EDCI 652 Parental Involvement in Early Childhood Education****Credits 3. 3 Lecture Hours.**

Dynamics of the family unit, school-home communication systems, legalities of parent participation in the school, parent involvement, parent training and home bound programs; development of programs with parents.

EDCI 653 Education Policy for Language-Minority Children**Credits 3. 3 Lecture Hours.**

Analysis of language planning, educational policies and instructional models in the U.S. and internationally for the education of young language-minority students.

Prerequisite: Graduate classification.**EDCI 654 Organization and Operation of Early Childhood Education Programs****Credits 3. 3 Lecture Hours.**

Comprehensive survey of the various types of preschool centers serving the needs of young children; operating procedures, programs and services provided; experimental educational research projects now being conducted with young children.

EDCI 655 Contemporary Visual Culture**Credits 3. 3 Lecture Hours.**

Interdisciplinary investigation of visual culture and related cultural, social, political, digital, ontological, and educational issues, theories, and production and consumption practices in the postmodern era; examination of contemporary visual culture as a site of critical inquiry that promotes social justice, cultural work, and democratic pedagogy.

Prerequisite: Graduate classification.**EDCI 656 Learning Theories for Teachers of Young Children****Credits 3. 3 Lecture Hours.**

Educational applications developed from theory and research of young learners, specifically the processes of learning.

Prerequisite: Graduate classification.**EDCI 658 History of Education****Credits 3. 3 Lecture Hours.**

The genesis of formal education in the Western world beginning with the ancient Greeks and working through the Enlightenment; tracing the idea that schooling is a fundamental part of human existence and therefore crucial to all questions concerning the human condition.

Prerequisite: Doctoral classification or approval of instructor.**EDCI 659 History of American Education****Credits 3. 3 Lecture Hours.**

The social and institutional role of public education in the United States from 1789 to the present; including clarification of the political and economic underpinnings that have worked catalytically to change the structure of public education in terms of philosophy, methods and curricula.

Prerequisite: Doctoral classification or approval of instructor.**EDCI 660 Research Investigating the Science Teacher Professional Continuum in Texas****Credits 3. 3 Lecture Hours.**

Reviews general features and investigates aspects of the science teacher professional continuum (TPC), including recruitment, retention, induction, mentoring, professional development, professional culture, and reformed practice; uses extant data sets in TPC research, including literature review, conceptual framework development, research proposal, IRB approval, data analysis, and making conclusions.

Prerequisite: Graduate classification in EDCI or approval of instructor.**EDCI 661 Mixed Methods Research in Curriculum and Instruction****Credits 3. 3 Lecture Hours.**

Introduction to mixed methods research, including a brief history of approaches to educational research; comparison of scientific research and educational research; specific designs and methods for mixing qualitative and quantitative approaches in data collection, analysis, and synthesis.

Prerequisite: Graduate classification.**EDCI 662 Philosophical Theories of Education****Credits 3. 3 Lecture Hours.**

Selected historical theories of education from Plato to Skinner; evaluating educational ends and means; the nature of knowledge, its acquisition and transmission. Doctoral level only.

EDCI 663 Advanced Pedagogy in Science Education**Credits 3. 3 Lecture Hours.**

Advanced examination of the teaching of science; emphasis on teacher behaviors and strategies, lesson and unit design, laboratory instruction, selection of content, materials and activities, and methods of self-assessment in pre-K to college and informal educational settings.

EDCI 665 Science and Mathematics Curricula**Credits 3. 3 Lecture Hours.**

Critical exploration of the trends and issues in school science and mathematics programs; consideration of the foundations and strategies for the design, selection, and evaluation of mathematics and science curricula.

EDCI 667 Nature of Science and Science Education**Credits 3. 3 Lecture Hours.**

Use of history, philosophy and sociology of science to address issues such as what is science, how science works and the nature of scientific knowledge, improve science teaching, and promote robust science learning and more informed socio-scientific decision-making.

EDCI 668 History and Foundations of Science Education**Credits 3. 3 Lecture Hours.**

Examination of the historical and theoretical background of popular research areas in science education and their influence on current science teaching practices; includes the nature of science, scientific literacy, inquiry, conceptual change, argumentation, and science teacher preparation and professional development.

Prerequisite: Graduate classification.**EDCI 669 Science Education in Sociological Context****Credits 3. 3 Lecture Hours.**

Explores science and its endeavors from a sociological perspective in order to make inferences on school science practice and science teaching; discusses the social context of disciplinary knowledge, problems of experimentation and scientific measurement, originality, cognitive particularism, collectivization of science, and peer review.

Prerequisite: Graduate classification.**EDCI 670 Social Studies in Elementary and Secondary Education****Credits 3. 3 Lecture Hours.**

Methodology course focusing upon the implementation, both practical and theoretical, of the objectives of social studies: current trends, resource materials, demonstrations of teaching methods.

EDCI 671 How People Learn Science**Credits 3. 3 Lecture Hours.**

Investigation of well-established theories of learning, motivation and attribution; significant implications for teaching and learning science; examination of teaching models congruent with how people learn science.

Prerequisite: Graduate classification.**EDCI 673 Analysis of Teaching Behavior****Credits 3. 3 Lecture Hours.**

Identification of beliefs and assumptions regarding teaching; review of research on teacher effectiveness; alternative methods for gathering data regarding dimensions of teaching behavior; development of teacher analysis systems.

EDCI 675 Teaching Strategies: Patterns of Learning**Credits 3. 3 Lecture Hours.**

Learning and teaching theory and research applied to development of teaching strategies appropriate for various contents, objectives and instructional situations; variables influencing learner behavior and approaches to optimization of teacher behavior.

Prerequisite: EPSY 602 or EPSY 673 recommended.**EDCI 676 Evaluation and Implementation of Electronic Learning Materials****Credits 3. 3 Lecture Hours.**

Principles of instructional design applied to electronic materials adoption and organizational management for implementation of eLearning resources; Emphasis on guidelines for selecting and evaluating eLearning resources addressing individual learner needs using online delivery platforms.

Prerequisite: Graduate classification.**EDCI 677 Strategies for Teaching in a Culturally Pluralistic Society****Credits 3. 3 Lecture Hours.**

Research concerning the cognitive, psychomotor and affective aspects of learning and teaching among culturally diverse learners; practical applications to curriculum and instruction.

EDCI 680 Proseminar**Credit 1. 1 Other Hour.**

Structured seminar on major concepts, principles and issues in education drawn and analyzed from various contributing theoretical and research bases. Critical new developments incorporated as they occur. Required of all Ed.D. students. May be repeated for credit.

Prerequisite: Approval of instructor.**EDCI 681 Seminar****Credit 1. 1 Lecture Hour.**

Professional roles and responsibilities, research, special topics and other issues relevant to master's and doctoral students in curriculum and instruction.

EDCI 682 Seminar in...**Credit 1. 1 Lecture Hour.**

Knowledge, skills and attitudes in educational curriculum and instruction. Specific topics will be assigned for each seminar as it is offered. May be repeated for credit.

EDCI 683 Field Practicum**Credits 1 to 3. 1 to 3 Other Hours.**

Designed to provide supervised experiences based upon a theoretical framework in profession settings related to the work of teaching, learning and culture; practical experiences closely supervised by the department faculty.

Prerequisite: Approval of instructor.**EDCI 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

On-the-job training for educational curriculum and instruction majors under the supervision of successful, experienced personnel from the University; conducted in a setting appropriate to the student's projected career aspirations and areas of specialization.

EDCI 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems in the field of education.

EDCI 686 Research Methods in EDCI I**Credits 3. 3 Lecture Hours.**

Framework for understanding distinctions among research methodologies used in the field of curriculum and instruction; includes classes of research questions, methods of collecting and decisioning evidence, theoretical assumptions, strengths, weaknesses, and the work of major proponents.

Prerequisite: Admission into TLAC doctoral program.

EDCI 687 Research Methods in EDCI II**Credits 3. 3 Lecture Hours.**

Framework for understanding distinctions among research methodologies used in the field of curriculum and instruction; includes classes of research questions, methods of collecting and decisioning evidence; basic principles of descriptive and inferential statistics and their application in context of various research paradigms.

Prerequisite: EDCI 686.**EDCI 688 Research Methods in EDCI III****Credits 3. 3 Lecture Hours.**

Framework for understanding distinctions among research methodologies used in the field of curriculum and instruction; includes classes of research questions, methods of collecting and decisioning evidence; basic principles of multivariate statistics and their application in context of various research paradigms.

Prerequisite: EDCI 687.**EDCI 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of curriculum and instruction. May be repeated for credit.

EDCI 690 Theory of Curriculum and Instruction Research**Credits 3. 3 Lecture Hours.**

Theory and design of research problems and experiments in various subfields of curriculum and instruction; communication of research proposals and results; evaluation of current research of faculty and student and review of current literature. May be repeated for credit.

EDCI 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

EDCI 692 Professional Study**Credits 1 to 23. 1 to 23 Other Hours.**

Approved professional study of project undertaken as the terminal requirement for doctor of education degree. Preparation of a record of study summarizing the rationale, procedure and results of the completed project.

Prerequisite: Approval of major advisor.**EDCI 701 Scientific Inquiry in Science Education****Credits 3. 3 Lecture Hours.**

Inquiry models and aspects of scientific inquiry; modification of science activities in pre-K to college and informal educational settings to be more congruent with science education goals, how students learn and the nature of science.

EDCI 702 Elementary Mathematics Instructional Strategies and STEM Learning**Credits 3. 3 Lecture Hours.**

Teaching models and the design of elementary mathematics instruction for digital age learners; emphasis on inquiry learning models in science, technology, engineering and mathematics (STEM).

Prerequisite: Graduate classification.**EDCI 703 International Teacher Education****Credits 3. 3 Lecture Hours.**

Examination of socio-cultural, economic and political forces that shape the structure of teacher education, the delivery of teacher education and the pedagogy of teacher education.

Prerequisite: Graduate classification.**EDCI 704 U.S. Teacher Education****Credits 3. 3 Lecture Hours.**

Studies American teacher education through using policy documents, historical literature and contemporary commentaries; spotlights key figures and features in American teacher education; debate contemporary issues.

Prerequisite: Graduate classification.**EDCI 705 Studying Teacher Education****Credits 3. 3 Lecture Hours.**

Introduction to a multitude of teacher education topics including knowledge of teaching/teacher knowledge, methods, courses, field experience, teacher education pedagogy, traditional/alternative certification programs, working with diverse students and special populations; program accountability and past/present/future research agendas as well as paradigms and politics.

Prerequisite: Graduate classification.**EDCI 710 The Hispanic Learner in Urban Settings****Credits 3. 3 Lecture Hours.**

Overview of demographic, social, psychological, cultural, political and historical issues that impact the school achievement of Hispanics in urban settings in the US.; analyzes methodological approaches of current research that guides common perceptions about Hispanics in education.

Prerequisite: Graduate classification.**EDCI 711 Theory and Application of Classroom Instructional Strategies****Credits 3. 3 Lecture Hours.**

Exploration of the basic principles of curriculum and instruction as applied to five to twelve year old learners; examination of traditional and innovative teaching strategies; focuses on planning curriculum and instruction through planning and utilizing materials, methods, activities, and facilities.

Prerequisite: Graduate classification or approval of instructor.**EDCI 715 Academic Writing for International Graduate Students****Credits 3. 3 Lecture Hours.**

Introduction to concepts central to graduate-level writing; designed specifically to benefit those whose native language is not English; exploration of writing productivity strategies and library-based research skills; development of clarity for written expression; improvement in command over textual, rhetorical and discursive conventions common in academic writing genres.

Prerequisite: Graduate classification.**EDCI 720 Engineering Design for School Teaching and Learning****Credits 3. 3 Lecture Hours.**

Understanding engineering design, the development of an engineering design conceptual framework and the K-12 curricula that are available to address STEM teaching and learning; equips teacher-leaders with the resources to interpret classroom phenomena with a multifaceted perspective using research-based evidence.

Prerequisite: Graduate classification.**EDCI 721 How People Learn STEM****Credits 3. 3 Lecture Hours.**

Foundational guide for the design and orchestration of contemporary integrated STEM learning environments; grounded in research findings and new theories about educational practices and outcomes.

Prerequisite: Graduate classification or approval of instructor.

EDCI 723 Developing Students' Disciplinary Language and Reading in STEM Teaching and Learning**Credits 3. 3 Lecture Hours.**

Examination, analyses and application of the role that STEM disciplinary language and reading play in STEM instruction at the middle and high school levels; evolution of STEM disciplinary language and literacies; STEM vocabulary, STEM fluency, factors influencing STEM comprehension, STEM language structure, writing to integrate, evaluate and assimilate STEM knowledge.

Prerequisites: Graduate classification; classroom teaching experience in middle and/or secondary grades.

EDCI 724 Science and Mathematics in the Teaching of Engineering Content in K-12 Schools**Credits 3. 3 Lecture Hours.**

Exploration of the integrated approach for teaching science and mathematics concepts using engineering design principles and technology in K-12 levels; learn to deliver contextualized and integrated STEM instruction that promotes student engagement, motivation and interest.

Prerequisite: Graduate classification.

EDCI 726 History and Trends in STEM Education**Credits 3. 3 Lecture Hours.**

Exploration of concepts and application of STEM in society; development of understanding of role of engineers, scientists and mathematicians in society; learning basic coding; application of principles to instructional settings.

Prerequisite: Graduate classification.

EDCI 751 Problem-Based Research Frameworks**Credits 3. 3 Lecture Hours.**

Introduction to scientific research associated with problems in K-12 curriculum and instruction settings; evaluation and problem solving for effective solutions to educational problems in school-based settings.

Prerequisite: Graduate classification and admission to online EdD in EDCI.

EDCI 752 21st Century Integration of Theory in Educational Settings**Credits 3. 3 Lecture Hours.**

Examination of various curricular issues and pedagogical implications encountered by schools and educators in the 21st century classroom; examination of various theoretical frameworks needed to address those issues and implications and advance student understanding.

Prerequisites: Graduate classification; admission to Online EdD in EDCI.

EDCI 754 Trends in Data Management and Analysis**Credits 3. 3 Lecture Hours.**

Understanding of basic principles behind modern data management and analysis; exploration and analysis of data to identify school improvement needs and make informed decisions in effecting change.

Prerequisites: Graduate classification; admission to Online Ed.D. in Curriculum and Instruction.

EDHP - Ed Healthcare Prof

EDHP 521 Curriculum Management, Leadership and Evaluation**Credits 3. 3 Lecture Hours.**

This course is composed of three specific parts. Curriculum Management will focus on developing plans related specifically to how to lead, manage current curriculum, and affect changes for the institution's educational mission. Leadership in Health Professions Education will introduce multiple concepts and theories regarding leadership approaches and how to apply the concepts in healthcare professions. The Learner Assessment and Program Evaluation portion will explore avenues of high quality, effective learner assessment and identify program performance, gaps and the process for improvement.

EDHP 523 Educational Research Design Practicum**Credits 2. 2 Lecture Hours.**

This course is a hand-on, practicum experience which offers learners the opportunity to develop a research plan and carry it through to IRB submission. Research plan development includes considerations of research design, data collection, and data analysis. A review of the literature will be required. Completion of the research plan is required for course credit. Faculty facilitation will occur online, in person, or via email. This elective may be taken more than once, to allow for further project development. Milestones must be met to earn credit.

EDHP 524 Manuscript Development Practicum**Credits 2. 2 Lecture Hours.**

This course is a hands-on, practicum experience which offers learners the opportunity to develop a medical education research paper and abstract suitable for submission to a peer-reviewed journal and/or conference. A comprehensive review of the literature will be required. Faculty facilitation will occur online, in person, or via email.

Prerequisite: Prior or concurrent learner involvement in an educational study, where data collection and analysis have already taken place.

EDHP 620 Advanced Innovative Teaching Strategies**Credits 3. 3 Lecture Hours.**

Facilitates the development, implementation and assessment of instructional innovations in the health professions educational environment; encourages active learning practices as well as analyzing, critiquing and discussing teaching strategies; examines the integration of educational technology in the instructional process.

Prerequisite: Graduate classification.

EDHP 622 Research Design and Analysis**Credits 4. 4 Lecture Hours.**

Focus on the design of research studies in health professions education to include principles of research design and different types of designs; analyze the strengths and weaknesses of study designs while investigating, implementing and practicing the general principles of research design.

Prerequisite: Graduate classification.

EDHP 630 Teaching and Learning Theory**Credits 3. 3 Lecture Hours.**

Explores educational theories and practices foundational to classroom, simulation and clinical learning; emphasis on practical application of teaching/learning theory in classroom, simulation and clinical learning environments promoting the transfer of theory to practice; demonstration of knowledge of teaching and learning theories impacting curriculum design relevant to the health care educator.

Prerequisite: Graduate classification.

EDHP 631/NURS 631 Curriculum Foundations for Health Care Professionals**Credits 3. 3 Lecture Hours.**

Models of curriculum development and design based on educational philosophy and professional standards; scope and sequence, curriculum alignment, curriculum mapping; program development through generation of content outlines, objectives, and assessments.

Prerequisite: Graduate classification.

Cross Listing: NURS 631/EDHP 631.

EDHP 632/NURS 632 Assessment and Evaluation for Healthcare Professionals**Credits 3. 3 Lecture Hours.**

Practical and theoretical issues involved in evaluating student performance, teacher performance and educational programs; performance-based assessments applicable to didactic, simulated and clinical learning environments; assessment instruments and strategies in summative and formative evaluation processes; develop, execute and interpret educational assessments and evaluation methods.

Prerequisite: EDHP 631/NURS 631 or NURS 631/EDHP 631.

Cross Listing: NURS 632/EDHP 632.

EDHP 633/NURS 633 Teaching Strategies for Health Care Professionals**Credits 3. 3 Lecture Hours.**

Best practices research on instructional pedagogy and adult learning; principles, concepts and theories used in practice that create effective learning environments; teaching strategies responsive to diverse learning styles and needs of learners; reflective practices and self-assessment; practical classroom, simulation and clinical teaching strategies consistent with current evidence; teaching methods using technology.

Prerequisites: EDHP 631/NURS 631 or NURS 631/EDHP 631; EDHP 632/NURS 632 or NURS 632/EDHP 632.

Cross Listing: NURS 633/EDHP 633.

EDHP 634 Teaching Practicum**Credits 1 to 2. 1 to 2 Lecture Hours.**

Integration of education role theory and practice with socialization into the educator role; guided practicum with experiences in the application of the health professional's role as educator in selected academic and healthcare settings; experiences in the classroom and/or clinical area (academic or staff educator) as desired by the health profession.

Prerequisites: EDHP 630, EDHP 631/NURS 631, EDHP 632/NURS 632 and EDHP 633/NURS 633.

EDHP 635 Research and Writing in Education for Healthcare Professionals**Credits 3. 3 Lecture Hours.**

Guided process to continue a research study; completing a draft of the thesis and/or the preparation of the oral defense.

Prerequisites: Approval of course director; HCPI 652/NURS 652 or NURS 652/HCPI 652.

EDHP 636 Project**Credits 3. 3 Other Hours.**

Non-thesis, pedagogy-related research; practice effective research strategies as a collaborative, mentored experience; approved projects include written and final oral presentation.

Prerequisites: EDHP 630, EDHP 631/NURS 631, EDHP 632/NURS 632, EDHP 633/NURS 633, EDHP 634, HCPI 652/NURS 652 and approval of instructor.

EDHP 685 Directed Studies**Credits 1 to 3. 1 to 3 Other Hours.**

Individual pursuit of specific problems involving application of theory and practice in the various disciplines of healthcare education. May be taken three times for credit.

Prerequisite: Graduate classification and approval of instructor.

EDHP 691 Research**Credits 1 to 3. 1 to 3 Other Hours.**

Student research initiative within the scope of the project/thesis. This course is designed to provide students with additional time and support to complete the thesis or project and to maintain continuous enrollment. This course may be repeated for a maximum of three credits.

Prerequisite: Completion of the thesis course and approval by student's advisory committee and the EDHP director.

EDTC - Educational Technology

EDTC 602 Educational Technology: Field, Theory and Profession**Credits 3. 3 Lecture Hours.**

Introduction to the field of educational technology, including media, instructional design, theory and research; exploration of the history and future direction of the field; careers in educational technology through interaction with professionals currently working in the field.

Prerequisites: EDTC Major; approval of instructor.

EDTC 608 Online Course Design**Credits 3. 3 Lecture Hours.**

Application of systematic instructional design principles to the development of online instruction within a learning management system; experience designing and facilitating both asynchronous and synchronous e-learning environments according to evidence-based practices.

Prerequisites: EDTC 645 or approval of instructor; approval of department head; graduate classification.

EDTC 613 Integrating Technology in Learning Environments**Credits 3. 2 Lecture Hours. 1 Lab Hour.**

Develops a broad understanding of what is involved in designing technology rich environments to support active learning; examines the integration of human learning theories with instructional design and development practices in the selection, preparation, evaluation, and ethics of instructional technology implementation.

EDTC 621 Graphic Communication and Interface Design**Credits 3. 3 Lecture Hours.**

Effective communication using visual channel humans use to process information; application of research findings and design principles to the effective design of graphical displays to communicate functionality and structure; critical analysis of the interfaces of everyday objects and e-learning resources; includes flawed interfaces, elegant design solutions, user-centered design and usability.

Prerequisites: Graduate classification; approval of department head.

EDTC 631 Educational Video**Credits 3. 3 Lecture Hours.**

Design and development of educational videos using choice of video edition program; experience the entire process of developing educational videos, from concept to finished project; emphasis on instructional message design, treatment, and storyboarding.

Prerequisites: Graduate classification; approval of instructor.

EDTC 641 Educational Game Design**Credits 3. 3 Lecture Hours.**

Formal and dramatic elements of successful non-educational games for principles of effective game design; application principles to the critique of existing educational games; examination commercial games originally designed for entertainment and their use to address educational objectives; games through the lens of multiple theories of learning and motivation, including situated cognition, flow, and systems theory.

Prerequisites: Graduate classification; approval of department head.

EDTC 642 Designing for Mobile Learning**Credits 3. 3 Lecture Hours.**

Introduction to basics of designing educational applications for mobile devices; emphasis on instructional, visual and human-computer interaction design principles; hands-on design and development work combined with a theoretical approach to designing learning experiences; previous programming experiences not required.

Prerequisites: Graduate classification; approval of department head.

EDTC 645 Emerging Technologies for Learning I**Credits 3. 3 Lecture Hours.**

Evaluation of emerging trends and technologies and their impact on learning and performance; emphasis on technologies currently being adopted in organizations and driving changes in education; hands-on activities examining multiple technologies and identifying best practices.

Prerequisites: Graduate classification; approval of department head.

EDTC 646 Emerging Technologies for Learning II**Credits 3. 3 Lecture Hours.**

Critical examinations of trends and technologies expected to have an impact on learning and performance over the next five years; educational futurist predictions; key factors to consider in adoption/integration decisions; theoretical and technological underpinnings; hands-on activities field of interest.

Prerequisites: Graduate classification; approval of department head.

EDTC 651 E-Learning Design and Development**Credits 3. 3 Lecture Hours.**

Design and development of stand-alone instructional programs for independent learning; consideration of research-based principles for the design of these programs, including guidelines for design decisions related to rich media, navigation, learner/program control, practice, interactivity and feedback; application of these principles to design and develop a program on a topic of choice; use of Adobe Captivate and image editing software.

Prerequisite: Approval of instructor.

EDTC 654 Instructional Design: Techniques in Educational Technology**Credits 3. 3 Lecture Hours.**

Introduces systems approach to instructional design with focus on the functions of systems models in planning, developing and evaluating instruction; use of instructional development models which systematically assure proper instructional design; participants will develop instructional products individually and in groups; a strong theoretical foundation utilized.

Prerequisite: Approval of instructor and department head.

EDTC 655 Instructional Design II**Credits 3. 3 Lecture Hours.**

Preparation for leadership in instructional design through exploration of project management, needs assessment, goal analyses, rapid prototyping, problem-based learning, case-based learning, design of learning objects, ID for international audiences, instructional materials and program evaluation; theories that contribute to the field.

Prerequisites: Graduate classification; approval of department head; EDTC 654.

EDTC 656 Computer Graphics: Educational Applications and Production Techniques**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Computer graphics production used in the development of educational materials; acquired skills and knowledges applied to the student's interest area with respect to theoretical and research issues relating to the effective instructional use of print and computer-based instructional materials; techniques include digitizing, image-processing and animation.

Prerequisites: EDTC 645 or approval of instructor; approval of department head.

EDTC 660 Interactive Video/Multimedia: Production and Utilization**Credits 3. 3 Lecture Hours.**

Principles and techniques of interactive video/multimedia design and production; practical applications of media (video, digitized video and audio) production techniques and instructional control programs utilizing authoring software; produce materials for interactive instructional programs involving features such as CD-ROM video and audio, simulations, interactive digital movies, web-based delivery, etc.

Prerequisites: EDTC 645 or approval of instructor; approval of department head.

EDTC 662 Computer Utilization in Educational Research and Practice**Credits 3. 3 Lecture Hours.**

Use of computers for application in educational and research settings; activities include student/subject monitoring, hardware use and design, automatic data collection; data storage, retrieval, transmission and analysis; web-based research formats are included; projects will relate to major area of study.

Prerequisites: EDTC 645 or approval of instructor; approval of department head.

EDTC 664 Management of Instructional Telecommunication Systems**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Management of Instructional Telecommunication Systems. Analysis of instructional telecommunications needs associated with educational and training programs; analysis, design, development, implementation and evaluation of computer-based management systems.

Prerequisites: EDTC 645 or approval of instructor; approval of department head.

EDTC 668 Applications of Telecommunications in Education**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Instructional applications of telecommunications; analysis of characteristics of varied systems, both dedicated and public networks, and design of appropriate strategies and methods using those systems.

Prerequisites: EDTC 645 or approval of instructor; approval of department head.

EDTC 683 Practicum in Educational Technology**Credits 1 to 3. 1 to 9 Other Hours.**

Supervised experience in applied area of educational technology; student will plan and develop an integrative product relating to educational technology theory, practice and equipment.

Prerequisite: Approval of instructor and department head.

EDTC 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Supervised experiences in performing professional functions appropriate to career goals.

Prerequisites: Application one month prior to registration; approval of instructor and department head.**EDTC 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems in instructional technology not within thesis research and not covered by any other course.

Prerequisite: Approval of instructor and department head.**EDTC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of educational technology. May be repeated for credit.

Prerequisite: Approval of instructor.**EDTC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of major advisor and department head.

EEBL - Ecology and Evolutionary Biology

EEBL 601 Physiological Ecology**Credit 1. 1 Lecture Hour.**

Examination of how physiological systems respond, over different timescales, to variation in physical and biological environments; understanding how the interaction of organism and environment determines characteristics relevant to ecology; understanding the effect of individual characteristic on population and interspecific dynamics.

Prerequisite: Graduate classification.**EEBL 602 Population Ecology****Credit 1. 1 Lecture Hour.**

Fundamental concepts in population dynamics; focus on birth, death, immigration and emigration processes; how processes are affected by internal factors and ways they affect population abundance.

Prerequisite: Graduate classification.**EEBL 603 Community Ecology****Credit 1. 1 Lecture Hour.**

Fundamental concepts in community ecology; conceptual development of the sub-discipline; spatial and temporal patterns of community structure; processes that determine community structure and dynamics; interface of population, community and ecosystem ecology; applications of community ecology for natural resource management, agriculture and health

Prerequisite: Graduate classification.**EEBL 604 Ecosystem Ecology****Credit 1. 1 Lecture Hour.**

Examination of flow of materials, energy and information between ecosystems and the geographic structure in which ecosystems are embedded globally; integrative nature of spatial and temporal processes acting across ecosystem units.

Prerequisite: Graduate classification.**EEBL 605 Population and Quantitative Genetics****Credit 1. 1 Lecture Hour.**

Basic overview of the fields of population and quantitative genetics; fundamental concepts and their applications in research of natural populations.

Prerequisite: Graduate classification.**EEBL 606 Phylogenetics and Comparative Biology****Credit 1. 1 Lecture Hour.**

Examination of phylogenetics and comparative biology.

Prerequisite: Graduate classification.**EEBL 607 Evolutionary Genomics****Credit 1. 1 Lecture Hour.**

New techniques for generating large amounts of genetic data, including thousands of single-nucleotide polymorphisms and whole-genome sequence data; transforming the study of evolutionary biology and the interpretation of evolutionary phenomena; includes population genetics, adaptation, phylogenomics and speciation.

Prerequisite: Graduate classification.**EEBL 608 Integrative Animal Behavior****Credit 1. 1 Lecture Hour.**

Examination of the contributions of behavior to survival and reproduction; the interaction of evolutionary history and ecological circumstance to shape the expression of behavior; integrative nature of behavior; interaction of evolutionary processes, mechanistic constraints and ecological demands involved in selecting for a set of behavioral strategies.

Prerequisite: Graduate classification.**EEBL 610 First Year Graduate Seminar****Credit 1. 1 Lecture Hour.**

Attendance and active participation in the weekly dinnertime conversation on PhD and career planning with ecology and evolutionary biology core faculty and others; faculty and colleagues provide feedback on application for fellowship support.

Prerequisite: Graduate classification.**EEBL 612 Open Source for Open Science Bootcamp****Credit 1. 1 Lecture Hour.**

Exposure to command line programming in R; principles of data import, vetting, processing, analysis, graphing and produce export; bootcamp precedes Fall semesters over a three-day period.

Prerequisite: Graduate classification or approval by instructor.**EEBL 630 Big Bend National Park Natural History Survey****Credits 2. 2 Other Hours.**

Advanced course taught in Big Bend National Park emphasizing biological, ecological, and natural history features of the Trans-Pecos ecoregion; detailed notes on the biology and geology of Big Bend based upon daily field trips will be recorded.

Prerequisites: Graduate classification; approval of instructor.**EEBL 676 Speciation Genetics****Credits 3. 3 Lecture Hours.**

Introduction to the ability to speciate into biologically diverse forms via microevolutionary processes; literature on the origin of species beginning with Darwin and continuing through contemporary work; overview of several major topics in speciation with special emphasis on the genetics of speciation in this genomic era.

Prerequisites: GENE 603 and BIOL 610 or BIOL 466, or equivalent.**Cross Listing:** VIBS 676 and GENE 676.

EEBL 681 Seminar**Credit 1. 1 Lecture Hour.**

Attendance and active participation in the weekly ecology and evolutionary biology colloquium featuring guest speakers invited by students and faculty. May be taken up to six hours for credit.

Prerequisite: Graduate classification.**EEBL 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of ecology and evolutionary biology.

Prerequisite: Graduate classification.

EHRD - Ed. Human Res. Develop.

EHRD 601 Foundations of Human Resource Development**Credits 3. 3 Lecture Hours.**

Survey of the set of systematic and planned activities designed by an organization to provide its employees with the necessary skills to meet current and future job demands including learning and human resource development needs assessments, task analysis, designing, implementing and evaluating training programs, career development, organization development.

Prerequisite: Doctoral classification only.**EHRD 602 Critical Issues in Human Resource Development****Credits 3. 3 Lecture Hours.**

Critical issues in human resource development; development of workforce through training and development activities.

Prerequisite: Graduate classification.**EHRD 603 Applied Theoretical Foundations of Human Resource Development****Credits 3. 3 Lecture Hours.**

Challenges of supervision associated with human resource development settings; how to apply theoretical foundations of human resource development to ensure employees obtain the necessary skills for current and future job demands.

Prerequisite: Master's level classification.**EHRD 605 Principles and Practices of Leadership in Human Resource Development****Credits 3. 3 Lecture Hours.**

Development and application of leadership models for human resource development settings; introduce and examine historical, philosophical and theoretical aspects of leadership; explore and evaluate the ethical and influence dimensions of leadership; critically examine the contemporary research characteristics of effective leadership.

Prerequisite: Graduate classification.**EHRD 606 Project Management in Human Resource Development****Credits 3. 3 Lecture Hours.**

The use of established project management theory, tools, practices and technology toward the effective management of organizational processes, projects, and programs in universities, government, business, and industry.

EHRD 607 International Human Resource Development**Credits 3. 3 Lecture Hours.**

Organization, delivery, and management of human resource development programs in multinational and global corporate settings.

Prerequisite: Graduate classification.**EHRD 612 Training and Development in Human Resource Development****Credits 3. 3 Lecture Hours.**

Overview of the process of planning, implementing and evaluating training and development in a variety of settings; includes conceptual tools needed to develop and design training.

Prerequisite: Graduate classification.**EHRD 613 Career Development in Human Resource Development.****Credits 3. 3 Lecture Hours.**

Foundations for developing expertise in the area of career development; content to serve to expand knowledge and prepare individuals for optimizing human resources in human resource development organizations; focusing on programs, methods, practices, and techniques by combining personal and organizational factors.

Prerequisite: Graduate classification.**EHRD 614 Strategic Planning for Human Resource Development****Credits 3. 3 Lecture Hours.**

Strategic planning in Human Resource Development (HRD); elements for training, career and organizational development; mission, values and culture, vision, audit analysis and modeling.

Prerequisite: Graduate classification.**EHRD 616 Methods of Teaching Adults****Credits 3. 3 Lecture Hours.**

Selection and use of appropriate instructional design strategies in teaching adults.

EHRD 618 Evaluation Models in Human Resource Development**Credits 3. 3 Lecture Hours.**

Providing instruction, insights, and learning experiences regarding educational human resource development applications of and relationships among five leading types of evaluation: needs assessment, program design/delivery, performance outcomes, impact assessment, and efficiency/ROI.

EHRD 619 Conflict Management and Dialogue**Credits 3. 3 Lecture Hours.**

Understand and practice conflict management and dialogue; identify and learn importance of effective conflict management in workplace; develop skills to effectively engage in meaningful conflict using effective modalities; enhance negotiating preferences and its impact on self, workplace and careers.

Prerequisite: Graduate classification.**EHRD 620 Emotions in Education and Industry****Credits 3. 3 Lecture Hours.**

Exploring and understanding the emotional foundations of effective working relationships among teachers, trainers and trainees in educational, industrial and business settings.

Prerequisite: Graduate classification.**EHRD 621 Communication in Human Resource Development****Credits 3. 3 Lecture Hours.**

Visual, oral, written and computer-based communication processes and their application in organizations, interpersonal interactions and small group settings in human resources development.

Prerequisite: Graduate classification.**EHRD 622 Training Task Analysis****Credits 3. 3 Lecture Hours.**

Developing an understanding of the theory and practice of performance and needs analysis as applied in the public and private employment sectors; reviewing of the current issues related to job task analysis.

Prerequisite: Graduate classification.

EHRD 624 Change Theory**Credits 3. 3 Lecture Hours.**

Conceptual tools needed to understand theories of change and to develop ways of operationalizing change for education and research.

Prerequisite: Graduate classification.

EHRD 625 Organization Development and Performance in Human Resource Development**Credits 3. 3 Lecture Hours.**

Introduction to major theories, concepts, skills, and techniques for the practice and management of organization change and development in various organizational performance contexts and human resource development settings.

Prerequisite: Graduate classification.

EHRD 627 Research and Development in Educational Human Resource Development**Credits 3. 3 Lecture Hours.**

Methods of conducting research programs in educational human resource development; defining the research problem and overview of quantitative, qualitative, action research, and mixed methods.

EHRD 628 Research and Publishing in Human Resource Development**Credits 3. 3 Lecture Hours.**

The role of research in human resource development; emerging the themes in research; criteria for evaluating research; critique of past and future presentations; the role of professionalism and professional organizations in human resource development; offered in association with the annual conference of the Academy of Human Resource Development.

Prerequisite: Graduate classification.

EHRD 630 Adult Learning**Credits 3. 3 Lecture Hours.**

Research and theory in adult learning; factors influencing the adult learning process; and how adult development intersects with learning in adulthood.

EHRD 631 Foundations of Adult Education**Credits 3. 3 Lecture Hours.**

Fundamental concepts and definitions relating to adult education as a field of study; major historical developments and philosophical roots of adult education from a sociocultural and global perspective; diverse institutional commitments and responses to adult learner needs; administrative, programming, and instructional practices in the field.

EHRD 633 Adult Literacy Education**Credits 3. 3 Lecture Hours.**

Important aspects of implementing literacy programs for adults; funding, recruiting, placement, counseling and using community resources.

EHRD 634/WGST 634 Introduction to Gender and Education**Credits 3. 3 Lecture Hours.**

Major discussions and debates in the area of gender and education, with particular attention to the role that feminism and feminist theory have played on the intersections of gender, race, class, ethnicity and sexuality.

Prerequisite: Graduate classification.

Cross Listing: WGST 634/EHRD 634.

EHRD 636 Working with Adult Groups**Credits 3. 3 Lecture Hours.**

Development of skills for facilitating productivity in task-oriented groups of adults. Issues, problems and concepts frequently encountered, and potential solutions.

EHRD 637 Workforce Development**Credits 3. 3 Lecture Hours.**

Evaluation of the workforce and the development of research techniques for identifying, assessing and evaluating the needs of industry for a quality workforce; models for staffing, curriculum needs, and program development designed and evaluated.

Prerequisite: Graduate classification.

EHRD 638 Issues in Adult Education**Credits 3. 3 Lecture Hours.**

Pressing contemporary issues within the field of adult education; explores issues and their impact on adult education research, theory, and practice. Specific topics addressed each semester offered.

EHRD 641 Evaluation of Adult Teaching and Learning**Credits 3. 3 Lecture Hours.**

Introduces a variety of approaches to assessment and provides experience in developing the appropriate materials of adult learning in adult settings.

Prerequisite: Graduate classification.

EHRD 642 Program Development in Adult Education**Credits 3. 3 Lecture Hours.**

Conceptual tools needed to develop educational programs for adults in a variety of settings; concepts of planning, implementation and evaluation.

EHRD 643 Adult Education, Globalization and Social Justice**Credits 3. 3 Lecture Hours.**

Impact of globalization on individuals and groups across nations; issues of access and opportunity; societal versus individual change and the meaning of international development.

Prerequisite: Graduate classification.

EHRD 647 Education for the Older Adult**Credits 3. 3 Lecture Hours.**

Older adults as unique learners—defining specific physical and psychosociological differences between older adults and other learners; educational implications of specific needs and current educational programs to meet those needs.

Prerequisite: Graduate classification.

EHRD 649/WGST 649 Feminist Pedagogy**Credits 3. 3 Lecture Hours.**

Explores how educational systems and institutions have regarded women historically and contemporarily; considers practical and theoretical writings on feminist pedagogy.

Prerequisite: Graduate classification.

Cross Listing: WGST 649/EHRD 649.

EHRD 650/WGST 650 Gender and International Education**Credits 3. 3 Lecture Hours.**

Explores the intersection of formal and informal education and understandings of gender in countries beyond the United States.

Prerequisites: EHRD 634/WGST 634.

Cross Listing: WGST 650/EHRD 650.

EHRD 651 Models of Epistemology and Inquiry in Educational Human Resource Development**Credits 3. 3 Lecture Hours.**

Inquiry in various epistemology paradigms outlined by Habermas and links to the outcomes of the research process.

EHRD 655 Qualitative Research Methods**Credits 3. 3 Lecture Hours.**

Introduction to qualitative research methods; theoretical underpinnings; the research paradigm and applied experience with the methodology.

Prerequisite: EHRD 651 or equivalent.

EHRD 656 Narrative Analysis**Credits 3. 3 Lecture Hours.**

Analysis of narratives; study of the theory behind "the narrative turn" in qualitative research; explore and apply various approaches to analyzing narratives in terms of both structure and their content.

Prerequisite: EHRD 655 or equivalent.

EHRD 657 Life History Research**Credits 3. 3 Lecture Hours.**

Examines qualitative research that focuses on life experience both in its entirety (life history; biography and autobiography) and with specificity around a particular event (autoethnography); explores the nature of these types of qualitative research and discussing the methodological issues inherent in each mode.

Prerequisite: EHRD 655 or equivalent.

EHRD 670 Women and Education**Credits 3. 3 Lecture Hours.**

Critical, theoretical and practical issues related to women and education.

Prerequisite: Graduate classification.

EHRD 671 Management of Distance Learning Systems**Credits 3. 3 Lecture Hours.**

Organization, management and administration of distance learning systems; funding delivery systems and policy.

Prerequisite: EHRD 673 or equivalent.

EHRD 673 Introduction to Distance Learning**Credits 3. 3 Lecture Hours.**

Introduction to the field of distance learning; application of distance learning principles to training settings via a variety of distance learning modalities; examination of the concepts surrounding distance learning, the theories that underpin the field, and the impact that they have on practice.

Prerequisite: Graduate classification.

EHRD 674 Distance Networking for Training and Development**Credits 3. 3 Lecture Hours.**

Development of knowledge towards application of telecommunications networking in corporate training settings; technical alternatives for delivery of subject matter for trainers.

Prerequisite: Graduate classification.

EHRD 675 Women and Organizational Leadership**Credits 3. 3 Lecture Hours.**

Historical, theoretical, ethical and legal issues relevant to women leaders in organizational contexts; skills development and practical approaches to effective leadership.

EHRD 679 Procurement of Contracts and Grants**Credits 3. 3 Lecture Hours.**

Funding sources that support research and development activities; identify methods of securing funding; study state, national and private funding sources and how to become successful in submitting to each; complete a proposal to a funding agency; and a management plan for a funded project.

Prerequisite: Graduate classification.

EHRD 681 Seminar**Credit 1. 1 Lecture Hour.**

Issues pertinent to adult education and/or educational human resource development and research in appropriate areas. Master of Science students seeking the HRD option will develop a professional portfolio documenting progress through the individual's program, highlighting goals, beliefs and reflections of learning outcomes associated with the program.

EHRD 683 Practicum in Educational Human Resource Development**Credits 1 to 6. 1 to 6 Lecture Hours.**

Field-based practicum in theory and strategies for researching and delivering programs within a variety of educational human resource development settings. May be taken two times.

Prerequisite: Approval of advisor.

EHRD 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Supervised experiences in performing professional functions appropriate to career goals.

Prerequisite: Approval of committee chair.

EHRD 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Directed individual study of selected problems in the fields of educational human resource development and adult education. Students may register up to but no more than two sections of this course in the same semester.

EHRD 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in adult education and human resource development. May be repeated for credit.

EHRD 690 Theory of Educational Human Resource Development Research**Credits 3. 3 Lecture Hours.**

Theory and design of research and inquiry in various applications of models and research procedures including quantitative analyses, naturalistic inquiry, research design and preparation of research proposals, as they relate to the discipline of educational human resource development and adult education.

Prerequisite: EHRD 651 or equivalent.

EHRD 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

EMED - Emergency Medicine

EMED 800 Emergency Medicine Clerkship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. 4-weeks; appreciation of the role of emergency medicine within the health care system; acquiring basic life support skills, including the recognition of immediately life threatening conditions and appropriate interventions; diagnoses and treatment of common acute problems; development skills to assess the undifferentiated patient, including the performance of a focused history and physical and the development of an appropriate differential diagnosis.

Prerequisite: Satisfactory completion of year three of the medical curriculum.

EMED 801 Emergency Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The practice of emergency medicine entails the rapid assessment and stabilization of patients presenting with acute injuries and illnesses as well as those with exacerbations of many chronic illnesses. At the completion of this rotation, students will: Better appreciate the role of emergency medicine within the healthcare system, acquire basic life support skills, including the recognition of immediately life-threatening conditions and appropriate interventions, diagnose and treat common acute problems, develop skills to assess the undifferentiated patient, including the performance of a focused history and physical and the development of an appropriate differential diagnosis.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 802 Emergency Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The practice of emergency medicine entails the rapid assessment and stabilization of patients presenting with acute injuries and illnesses as well as those with exacerbations of many chronic illnesses. At the completion of this rotation, students will: Better appreciate the role of emergency medicine within the healthcare system, acquire basic life support skills, including the recognition of immediately life-threatening conditions and appropriate interventions, diagnose and treat common acute problems, develop skills to assess the undifferentiated patient, including the performance of a focused history and physical and the development of an appropriate differential diagnosis.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 803 Prehospital Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective will provide the student the opportunity to experience that will improve the student's understanding of EMS systems and operations; student's understanding of the training, capability and clinical practice of EMS personnel and EMS medical directors. Prepare the future physician for a role as part of the EMS system.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 804 Emergency Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The practice of emergency medicine entails the rapid assessment and stabilization of patients presenting with acute injuries and illnesses as well as those with exacerbations of many chronic illnesses. At the completion of this rotation, students will: Better appreciate the role of emergency medicine within the healthcare system, acquire basic life support skills, including the recognition of immediately life-threatening conditions and appropriate interventions, diagnose and treat common acute problems, develop skills to assess the undifferentiated patient, including the performance of a focused history and physical and the development of an appropriate differential diagnosis.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 805 Prehospital Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective will provide the student the opportunity to experience that will improve the student's understanding of EMS systems and operations; student's understanding of the training, capability and clinical practice of EMS personnel and EMS medical directors. Prepare the future physician for a role as part of the EMS system.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 806 Emergency Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The practice of emergency medicine entails the rapid assessment and stabilization of patients presenting with acute injuries and illnesses as well as those with exacerbations of many chronic illnesses. At the completion of this rotation, students will: Better appreciate the role of emergency medicine within the healthcare system, acquire basic life support skills, including the recognition of immediately life-threatening conditions and appropriate interventions, diagnose and treat common acute problems, develop skills to assess the undifferentiated patient, including the performance of a focused history and physical and the development of an appropriate differential diagnosis.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 807 Toxicology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective will provide the student the opportunity to experience the initial clinical management of a patient with an acute poisoning. This elective will increase the student's familiarity and knowledge of clinical signs and symptoms of the major toxidromes. Students will also utilize the poison center in the management and use the clinical laboratory and radiography, decontamination, the use of antidotes, hemodialysis, and resuscitation algorithms.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 808 Emergency Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The practice of emergency medicine entails the rapid assessment and stabilization of patients presenting with acute injuries and illnesses as well as those with exacerbations of many chronic illnesses. At the completion of this rotation, students will: Better appreciate the role of emergency medicine within the healthcare system, acquire basic life support skills, including the recognition of immediately life-threatening conditions and appropriate interventions, diagnose and treat common acute problems, develop skills to assess the undifferentiated patient, including the performance of a focused history and physical and the development of an appropriate differential diagnosis.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

EMED 809 Emergency Ultrasound**Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

The use of bedside ultrasound has become standard of care in the practice of emergency medicine. Focused bedside emergency ultrasound is used for diagnostic purposes as well as to assist with various procedures including but not limited to central line placement, fracture reductions, and incision and drainage. This elective will provide students with an introduction and basic understanding of ultrasound physics, knobology, ability to acquire appropriate ultrasound images, interpretation of those ultrasound images, and limitations of bedside ultrasound. They will be expected to demonstrate 4th year medical student. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.

EMED 810 Longitudinal Bedside Ultrasound**Credits 1 to 15. 1 to 15 Other Hours.**

Consideration of bedside ultrasound, described as the new stethoscope, as core clinical skill in numerous specialties; augment understanding of anatomy, physiology and pathology by learning introductory bedside ultrasounds skills in a longitudinal fashion during the third and fourth years of medical school.

Prerequisite: Admission to medical school.

EMED 985 Off Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

EMED 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Emergency Medicine in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

ENDO - Endodontics

ENDO 600 Current Literature Review I**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; student assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 601 Current Literature Review II**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 602 Current Literature Review III**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 603 Current Literature Review IV**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 604 Current Literature Review V**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 605 Current Literature Review VI**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 606 Current Literature Review VII**Credit 1. 1 Lecture Hour.**

Detailed review of recently published literature on all subjects related to endodontics; critical evaluation of the scientific literature; assignment of recent issues of 28 selected dental journals for critical review of pertinent articles for scientific merit and clinical relevance; register for a total of 9 credit hours.

ENDO 607 Endodontics Treatment Planning Conference I**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 608 Endodontics Treatment Planning Conference II**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 609 Endodontics Treatment Planning Conference III**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 610 Endodontics Treatment Planning Conference IV**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 611 Endodontics Treatment Planning Conference V**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 612 Endodontics Treatment Planning Conference VI**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 613 Endodontics Treatment Planning Conference VII**Credit 1. 1 Lecture Hour.**

Diagnosis and treatment planning for complicated endodontic cases requiring advanced skills; case presentation by students and graduate faculty in a prescribed format; formulation and defense of diagnosis and treatment plan with biologic rationale based on documented scientific or clinical evidence; register for a total of 9 credit hours.

ENDO 614 Special Problems in Endodontics I**Credit 1. 1 Lecture Hour.**

In-depth exploration of subjects of individual's interest under graduate faculty supervision; concentrated and detailed search for information and analysis of published data as a basis for special reports, protocol development, research orientation and formulation; may register for a total of 6 semester hours.

ENDO 615 Special Problems in Endodontics II**Credit 1. 1 Lecture Hour.**

In-depth exploration of subjects of individual's interest under graduate faculty supervision; concentrated and detailed search for information and analysis of published data as a basis for special reports, protocol development, research orientation and formulation; may register for a total of 6 semester hours.

ENDO 616 Special Problems in Endodontics III**Credit 1. 1 Lecture Hour.**

In-depth exploration of subjects of individual's interest under graduate faculty supervision; concentrated and detailed search for information and analysis of published data as a basis for special reports, protocol development, research orientation and formulation; may register for a total of 6 semester hours.

ENDO 617 Special Problems in Endodontics IV**Credit 1. 1 Lecture Hour.**

In-depth exploration of subjects of individual's interest under graduate faculty supervision; concentrated and detailed search for information and analysis of published data as a basis for special reports, protocol development, research orientation and formulation; may register for a total of 6 semester hours.

ENDO 618 Special Problems in Endodontics V**Credit 1. 1 Lecture Hour.**

In-depth exploration of subjects of individual's interest under graduate faculty supervision; concentrated and detailed search for information and analysis of published data as a basis for special reports, protocol development, research orientation and formulation; may register for a total of 6 semester hours.

ENDO 619 Advanced Special Problems in Endodontics I**Credit 1. 1 Lecture Hour.**

Advanced topics of individual scientific or clinical interest; may register for a total of 5 semester hours.

ENDO 620 Advanced Special Problems in Endodontics II**Credit 1. 1 Lecture Hour.**

Advanced topics of individual scientific or clinical interest; may register for a total of 5 semester hours.

ENDO 621 Implant Concepts and Treatment**Credits 2. 2 Other Hours.**

In-depth knowledge of the theories, concepts and treatment modalities implant prosthodontics; emphasis is placed integrating basic concepts with rationale for treatment.

ENDO 622 Clinical Endodontics I**Credits 2. 2 Lab Hours.**

Diagnosis, management and treatment of patients requiring endodontic therapy by beginning graduate students under faculty supervision; case selection and patient load determined by student aptitude and clinical competence; register for a total of three semesters.

ENDO 623 Clinical Endodontics II**Credits 2. 2 Lab Hours.**

Diagnosis, management and treatment of patients requiring endodontic therapy by beginning graduate students under faculty supervision; case selection and patient load determined by student aptitude and clinical competence; register for a total of three semesters.

ENDO 624 Clinical Endodontics III**Credits 2. 2 Lab Hours.**

Diagnosis, management and treatment of patients requiring endodontic therapy by beginning graduate students under faculty supervision; case selection and patient load determined by student aptitude and clinical competence; register for a total of three semesters.

ENDO 625 Clinical Endodontics IV**Credits 2. 2 Lab Hours.**

Diagnosis, management and treatment of patients requiring endodontic therapy by beginning graduate students under faculty supervision; case selection and patient load determined by student aptitude and clinical competence; register for a total of three semesters.

ENDO 626 Clinical Endodontics V**Credits 2. 2 Lab Hours.**

Diagnosis, management and treatment of patients requiring endodontic therapy by beginning graduate students under faculty supervision; case selection and patient load determined by student aptitude and clinical competence; register for a total of three semesters.

ENDO 627 Advanced Clinical Endodontics I**Credits 2. 2 Lab Hours.**

Diagnosis and management of patients with complex treatment problems; includes medically compromised patients, retreatments, surgeries and difficult interdisciplinary cases.

ENDO 628 Advanced Clinical Endodontics II**Credits 2. 2 Lab Hours.**

Diagnosis and management of patients with complex treatment problems; includes medically compromised patients, retreatments, surgeries and difficult interdisciplinary cases.

ENDO 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of endodontics. May be repeated for credit.

ENDO 691 Research**Credits 1 to 5. 1 to 5 Other Hours.**

Research for thesis or dissertation.

ENGL - English

ENGL 602 First Year Seminar**Credits 3. 3 Lecture Hours.**

Comprehensive introduction to theory, method, and practice of graduate scholarship in English; develops familiarity with goals and practices of English studies, enhance research skills, formulate and articulate scholarship goals and projects, and practice writing genres within the field.

Prerequisite: Enrollment as a first-year PhD student.

ENGL 603 Bibliography and Literary Research**Credits 3. 3 Lecture Hours.**

Introduction of basic techniques of research and scholarly procedure in literature; research reports.

ENGL 604 Topics in Digital Research**Credits 3. 3 Lecture Hours.**

Topics in the studies of digital humanities; introduction to making/interpreting digital materials, the surrogates of books, paintings, etc. , that form our cultural heritage, as well as digitally-born literature, art and culture; reflection on digital cultures/ digital archives; theory and practice of creating and researching digital resources. May be taken three times for credit.

Prerequisite: Graduate classification.**ENGL 607 Topics in Medieval Literature and Culture****Credits 3. 3 Lecture Hours.**

Topics in history, theory, and interpretation of Medieval Literature and culture; may cover Old or Middle English; may include study of varied cultural forms, manuscript or editing problems, genres, and themes. May be taken three times for credit as content varies.

ENGL 608 Readings in Medieval Literature**Credits 3. 3 Lecture Hours.**

Wide reading in English literature of the Medieval period; introduction of major figures, genres, and issues in the period; introduction to current critical conversations in Medieval literary studies.

ENGL 610/LING 610 Topics in the History of the English Language**Credits 3. 3 Lecture Hours.**

Topics in the development of the English language; may include phonological, grammatical and lexical histories; study of social and political contexts; relationships between English and other languages. May be taken three times for credit as content varies.

Cross Listing: LING 610/ENGL 610.**ENGL 611 Topics in Early Modern Literature and Culture****Credits 3. 3 Lecture Hours.**

Topics in the history, theory, interpretation of Early Modern literature and culture; may focus on authors, groups of authors, themes, movements, genres, cultural contexts and/or theoretical framing. May be taken three times for credit as content varies.

ENGL 613 Readings in Early Modern Literature**Credits 3. 3 Lecture Hours.**

Wide reading in English literature of the Early Modern period; introduction of major figures, genres, and issues in the period; introduction to current critical conversations in Early Modern literary studies, including historical and social contexts.

ENGL 618 Readings in Eighteenth-Century British Literature**Credits 3. 3 Lecture Hours.**

Wide reading in British literature of the 18th Century; introduction of major figures, genres, and issues in the period; introduction to current critical conversations in 18th Century literary studies, including historical and social contexts.

ENGL 622 Elements of Creative Writing**Credits 3. 3 Lecture Hours.**

Creative writing in major forms; produce original work while reading models by masters; may include performance, group work, written and peer critiques.

ENGL 623 Topics in Creative Writing**Credits 3. 3 Lecture Hours.**

Topics in the theory and practice of creative writing; may focus on writing techniques; theories of composition in the major genres; theory, history, and interpretation of literary forms and composition. May be taken three times for credit as content varies.

ENGL 624 Advanced Creative Writing Workshop**Credits 3. 3 Lecture Hours.**

Writing workshop, with peer critique; may include discussion of literary and critical texts; major genres. May be taken three times for credit as instructor varies.

Prerequisite: ENGL 622 or approval of instructor.**ENGL 634 Readings in Nineteenth-Century British Literature****Credits 3. 3 Lecture Hours.**

Wide reading in British literature of the 19th Century; introduction of major figures, genres, and issues in the period; introduction to current critical conversations in 19th Century literary studies, including historical and social contexts.

ENGL 638 Topics in 18th and 19th Century British Literature and Culture**Credits 3. 3 Lecture Hours.**

Topics in the history, theory, interpretation of 18th and/or 19th Century British literature and culture; may focus on authors, groups of authors, themes, movements, genres, cultural contexts and/or theoretical framing. May be taken three times for credit as content varies.

ENGL 640 Topics in Children's Literature and Culture**Credits 3. 3 Lecture Hours.**

Topics in the history, theory, and interpretation of children's literature and other cultural forms; may focus on genres, critical and theoretical methods, social and historical contexts. May be taken three times for credit as content varies.

ENGL 642 Topics in Genre**Credits 3. 3 Lecture Hours.**

Topics in selected genres and subgenres of literary and cultural production; may focus on historical development and/or context, generic conventions, theoretical approaches. May be taken three times for credit as content varies.

ENGL 645 Topics in Gender, Literature, and Culture**Credits 3. 3 Lecture Hours.**

Topics in literature (especially women's writing), culture, and gender; may include issues such as feminism, masculinities, race, and sexualities; may be taken up to three times for credit.

ENGL 650 Readings in 20th and 21st Century Literature and Culture**Credits 3. 3 Lecture Hours.**

Wide reading in 20th and 21st Century literature; introduction of major figures, genres, and issues in the period; introduction to current critical conversations in modern and postmodern literary studies, including historical and social contexts.

ENGL 653 Topics in 20th and 21st Century Literature and Culture**Credits 3. 3 Lecture Hours.**

Topics in the history, theory, interpretation of 20th and 21st Century literature and culture; may focus on authors, groups of authors, themes, movements, genres, cultural contexts and/or theoretical framing. May be taken three times for credit as content varies.

ENGL 654/COMM 654 Classical Rhetoric**Credits 3. 3 Lecture Hours.**

Origins of rhetoric in classical Greece and Rome; exploration of the relationship between philosophy, rhetoric and democratic political culture; the contemporary relevance of classical thought to contemporary problems.

Cross Listing: COMM 654/ENGL 654.

ENGL 655/COMM 655 Contemporary Theories of Rhetoric
Credits 3. 3 Lecture Hours.

Investigation of the major figures in rhetorical theory in the 20th and 21st centuries; analysis of the relationship between rhetoric and power; identifying new challenges for rhetoric in global, multicultural, technological age. May be repeated for credit.

Cross Listing: COMM 655/ENGL 655.

ENGL 658/FILM 658 Topics in Film History
Credits 3. 3 Lecture Hours.

Topics in the history of the production, reception and institutional contexts of cinema; may focus on national cinemas, genres, movements, styles, film industries, film's relation to other media. May be taken three times for credit as content varies.

Prerequisites: Graduate classification.

Cross Listing: FILM 658/ENGL 658.

ENGL 659 Topics in Film Theory
Credits 3. 3 Lecture Hours.

Topics in theory of film production, reception, and interpretation; may focus on film's relation to other media, on film theory's relation to other theoretical areas, on the interdisciplinary nature of film theory and film studies. May be taken three times for credit as content varies.

ENGL 665 Topics in Cultural/Interdisciplinary Studies
Credits 3. 3 Lecture Hours.

Topics in history, theory, and practice of cultural studies and/or interdisciplinary studies; may focus on authors, schools, methods, genres, themes, or problems in rhetoric, discourse, and cultural studies. May be taken three times for credit as content varies.

ENGL 666 Topics in Textual Studies and Book History
Credits 3. 3 Lecture Hours.

Topics in the theory and practice of textual studies and book history; may focus on the book as material object, histories of printing and other technologies, digital humanities, book production and distribution, research methodologies. May be taken three times for credit as content varies.

ENGL 667 Topics in the History and Theory of Rhetoric
Credits 3. 3 Lecture Hours.

Issues and topics in the history and theory of rhetoric; may focus on rhetorical analysis of literature and other written and oral texts; theoretical issues in rhetoric and culture; social and historical contexts for rhetorical analysis; historical periods, themes, methods or genres. May be taken three times for credit as content varies.

ENGL 669 Topics in African American and Africana Literature and Culture
Credits 3. 3 Lecture Hours.

Topics in the history, theory, interpretation of African American and African literature and culture; may focus on authors, groups of authors, themes, movements, genres, cultural contexts and/or theoretical framing. May be taken three times for credit as content varies.

ENGL 670 Topics in Latino/a Literature and Culture
Credits 3. 3 Lecture Hours.

Topics in the history, theory, interpretation of Latino/a literature and culture; may focus on authors, groups of authors, themes, movements, genres, cultural contexts and/or theoretical framing. May be taken three times for credit as content varies.

ENGL 671 Readings in American Literature to 1900
Credits 3. 3 Lecture Hours.

Wide reading in American literature from its beginnings through the 19th Century; introduction of major figures, genres, and issues in the period; introduction to current critical conversations in pre-1900 American literary studies, including historical and social contexts.

ENGL 672 Topics in American Literature and Culture to 1900
Credits 3. 3 Lecture Hours.

Topics in the history, theory, interpretation of American literature and culture before 1900; may focus on authors, groups of authors, themes, movements, genres, cultural contexts and/or theoretical framing. May be taken three times for credit as content varies.

ENGL 673 Topics in Transnational Literature and Culture
Credits 3. 3 Lecture Hours.

Topics in theory and interpretation of transnational literature and culture; may focus on definitions of the transnational; on the relationships between the transnational and the global; on methods for study; on new configurations of literature and culture. May be taken three times for credit as content varies.

ENGL 680/WGST 680 Theories of Gender
Credits 3. 3 Lecture Hours.

Theories of gender, sexualities, feminism, embodiment, and difference with particular focus on their relationship to literary and cultural studies; emphasis on contemporary theoretical positions, discourses, and debates.

Cross Listing: WGST 680/ENGL 680.

ENGL 681 Seminar in English
Credit 1. 1 Lecture Hour.

Presentations by faculty, students and visiting scholars based on current research. May be repeated for credit.

Prerequisite: Graduate classification in English.

ENGL 683 Topics in Theory
Credits 3. 3 Lecture Hours.

Critical theory for English Studies; may focus on history, themes, methods, issues, new developments, interdisciplinary contexts. May be taken three times for credit as content varies.

ENGL 685 Directed Studies

Credits 1 to 6. 1 to 6 Other Hours.

Readings to supplement the student's knowledge of English or American literature or of the English language in areas not studied in other courses; research papers.

Prerequisites: Graduate classification and approval of department head.

ENGL 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours.

Selected topics in an identified area of English. May be repeated for credit.

ENGL 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research for thesis or dissertation.

ENGL 695 Publication and Professionalization
Credits 3. 3 Lecture Hours.

For advanced PhD students in English. Discussion of publication and professionalization; standards and practices of publication in academic journals; academic job market; writing, revision, and submission of scholarly articles. To be taken as S/U only.

Prerequisite: Must have completed coursework in English.

ENGL 697 Pedagogy**Credits 3. 3 Other Hours.**

Theories of teaching literature, composition, or rhetoric; pedagogical approaches and methods; supervised teaching; evaluation of current research and its relation to pedagogical practice; designed to assist students in their first teaching experience.

ENGR - Engineering

ENGR 600 Engineering Graduate Study Abroad**Credits 1 to 15. 1 to 15 Lecture Hours.**

For students in approved study abroad and reciprocal educational exchange programs. May be taken two times for credit.

Prerequisites: Graduate classification in engineering; admission to approved program abroad; approval of study abroad coordinator.

ENGR 611 Enterprise Basics for Technical Entrepreneurs**Credits 3. 3 Lecture Hours.**

Aspects of entrepreneurship for a technical enterprise; elements of a business including idea generation, startup financing, staffing, product design and production, marketing and selling a product; focus on the front end of the venture: product design and development, financing, identifying and attracting key personnel, and actually starting up company.

Prerequisites: Graduate classification in the college of engineering.

ENGR 612 Sales, Operations, and Manufacturing for Technology Companies**Credits 3. 3 Lecture Hours.**

Challenges faced in a start-up entity with respect to product manufacturing, operations and supply chain management, product pricing strategies, and sales and marketing; focus on small start-up to young mid-size enterprises.

Prerequisites: Graduate classification in the college of engineering.

ENGR 621 Technology Company Management, Leadership, and Corporate Culture**Credits 3. 3 Lecture Hours.**

Strategic challenges associated with enterprise management and leadership; establishing and maintaining a sustainable brand; developing an effective corporate culture; dealing with global competition; case studies in strategic thinking.

Prerequisites: Graduate classification in the college of engineering.

ENGR 630 Fundamentals of Subsea Engineering**Credits 3. 3 Lecture Hours.**

Orientation to subsea engineering fundamentals; includes SURF (Subsea, Umbilicals/Controls, Risers, Flowlines) equipment and configurations; exposure to practical, industry focused problems; subsea equipment components; design considerations and design drivers; subsea production operations; integrity critical maintenance activities.

Prerequisites: Graduate classification, enrollment in the College of Engineering or approval of instructor.

ENGR 632 Subsea Project Implementation**Credits 3. 3 Lecture Hours.**

Overview of the realization of a subsea development project; includes all stages from discovery to pre-commissioning of the subsea infrastructure.

Prerequisite: ENGR 630 or concurrent enrollment.

ENGR 640 Subsea Hardware Design**Credits 3. 3 Lecture Hours.**

Basic elements (bolting, seals, flanges & hubs, valves, fittings, connections, and actuators) that make up subsea hardware assemblies; understanding of how these elements work together in a system.

Prerequisites: ENGR 630 or concurrent enrollment, or approval of instructor.

ENGR 642 Subsea Pipeline Design**Credits 3. 3 Lecture Hours.**

A practical view of pipeline project realization from concept selection through installation and offshore acceptance testing.

Prerequisites: ENGR 430 or ENGR 630, or concurrent enrollment, or approval of instructor.

ENGR 643 Subsea Riser Design**Credits 3. 3 Lecture Hours.**

A practical view of riser project realization from concept selection through installation and offshore acceptance testing.

Prerequisites: Graduate classification; ENGR 430 or ENGR 630, or concurrent enrollment, or approval of instructor.

ENGR 650 Flow Assurance and Operability of Subsea Systems**Credits 3. 3 Lecture Hours.**

Hydrocarbon production and transport from offshore fields to the host facilities, including prevention and remediation of phenomena that hinder fluid flow in production systems; subsea architecture, hydrodynamic and thermal considerations, reservoir fluid characterization and analysis, solids management, thermal hydraulics and production chemistry.

Prerequisites: Graduate classification; enrollment in the College of Engineering; ENGR 630 or concurrent enrollment, or approval of instructor.

ENGR 651 Subsea Production Operations**Credits 3. 3 Lecture Hours.**

Multiphase hydrocarbon production and transport from offshore fields to host facilities under both steady-state and transient conditions; includes reservoir and SURF system management through chemical gas and water injection, surface and subsea processing, testing and maintenance through all phases of a subsea development.

Prerequisites: Graduate classification; enrollment in the College of Engineering; ENGR 630 or concurrent enrollment, or approval of instructor.

ENGR 661 Product Lean Launch for Engineers**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Exercises in the creation of an engineering-centric business using lean startup principles; customer and market validation; value proposition creation; minimum viable product (MVP) development; customer value chain discovery; communication skill training; development of a business model canvas for a student-developed engineering product business idea.

Prerequisites: ENGR 611 and ENGR 662; or approval of instructor.

ENGR 662 Engineering Entrepreneurship Hour**Credit 1. 1 Lecture Hour.**

Engagement with successful technology entrepreneurs from technical sectors across engineering and the nation; challenges faced by and characteristics of successful entrepreneurs and their strategies in launching and sustaining businesses on technology innovation; network with highly successful entrepreneurs and develop relations valuable to professional careers; development of speaking and presentation skills; networking with industry professionals in support of entrepreneurship.

Prerequisites: Graduate classification in College of Engineering.

ENGR 667 Project Management for Engineers**Credits 3. 3 Lecture Hours.**

An introduction to project management for engineers of all disciplines; principles of managing projects throughout their life-cycle, from the identification of needs to the completion and closing stage; emphasis on the project management process and associated tools and techniques.

Prerequisites: Graduate classification in engineering and approval of instructor.

ENGR 677 Science, Technology, Engineering and Mathematics (STEM) Teaching Professional Development**Credit 1. 1 Lecture Hour.**

Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research. Must be taken on satisfactory/unsatisfactory basis.

Prerequisites: Graduate classification and approval of instructor.

Cross Listing: GEOS 677 and SCEN 677.

ENGR 681 Professional Development Seminar**Credits 0-1. 0-1 Other Hours.**

Topics of interest related to the professional practice of engineering.

ENGR 684 Professional Internship**Credits 1 to 10. 1 to 10 Other Hours.**

Supervised experience of one academic year in industry where students can learn to apply their textbook-based skills to problems in the real-world environment.

Prerequisites: Admission to the Doctor of Engineering program and graduate classification.

ENGR 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Design or research problems executed either individually or as a team.

Prerequisites: Graduate classification; approval of graduate advisor.

ENGR 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Advanced topics of current interest in engineering. May be repeated for credit.

Prerequisite: Approval of instructor.

ENGR 698 Writing for Publication**Credits 3. 3 Lecture Hours.**

Writing in academic disciplines and settings. Writing for different audiences and purposes. Style; planning and development of academic journal articles; grant proposals; correspondence; oral presentations; technical reports. Permission of departmental/college graduate advisor.

Prerequisite: advanced standing in master's/doctoral programs.

ENTC - Engineering Technology

ENTC 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of engineering technology. May be repeated for credit.

ENTO - Entomology

ENTO 601 Principles of Systematic Entomology**Credits 3. 3 Lecture Hours.**

An introduction to the principles and theory of systematic zoology and comparative biology including species concepts and speciation; methods for higher classification including phylogenetic systematics, phenetics and evolutionary taxonomy; introduction to zoological nomenclature.

Prerequisite: Graduate classification in entomology or other biological sciences.

ENTO 602 Insect Biodiversity and Biology**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Biodiversity and biology of the orders and selected families of insects; order-level morphology, family-level natural history and identification; field trips and an insect collection provide experience with insect collecting methods, specimen preparation techniques and field biology.

Prerequisite: 6 hours of biological sciences.

ENTO 606 Quantitative Phylogenetics**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Designed to provide the theory and tools required for inference of phylogenetic (evolutionary) relationships among biological taxa using various types of comparative data including morphological characters, biochemical and molecular characters, and DNA sequences; hands-on analysis of data using contemporary tools.

Prerequisite: Entomology 601 or approval of instructor.

Cross Listing: GENE 606 and WFSC 646.

ENTO 608 Principles of Biological Control**Credits 3. 3 Lecture Hours.**

Theory and practices relating to the role and use of natural enemies in arthropod and plant population regulation; review and analysis of projects in biological control; biology and behavior of entomophagous arthropods.

Prerequisite: ENTO 201 or equivalent or approval of instructor.

ENTO 610 Host Plant Resistance**Credits 3. 3 Lecture Hours.**

Host plant resistance programs from the standpoint of the plant breeder, plant pathologist and entomologist; team taught with each discipline represented; roundtable discussion of assigned readings and lectures.

Prerequisite: Approval of instructor.

Cross Listing: SCSC 610 and PLPA 610.

ENTO 612 Insect Evolution**Credits 3. 3 Lecture Hours.**

Review current and historical ideas about the phylogeny and evolution of the major groups of hexapods; includes evidential basis for hypotheses of monophyly, competing phylogenetic hypotheses, major innovations and trends affecting the adaptive radiations of specific taxa, morphological character systems, and history of insect classification and the major character systems.

Prerequisite: One semester of insect or invertebrate zoology.

ENTO 614 Insect Community Ecology**Credits 3. 3 Lecture Hours.**

Provide a strong and contemporary foundation in insect population, community and evolutionary ecology; review historical and theoretical perspectives, current philosophies, approaches and a description of classic experiments used to test and modify theories on topics including insect herbivore-plant interactions; major biological forces affecting population dynamics and community structure (resource availability, competition, predation, mutualisms, etc.).

Prerequisite: Graduate classification.

ENTO 615 Insect Physiology**Credits 3. 3 Lecture Hours.**

Physiological processes of insects; metabolism, nutrition, neuro-endocrinology, nerve action, cell structure, respiration, circulation, excretion and flight; functional integration and regulatory processes of total organism.

Prerequisite: ENTO 306 or equivalent.**ENTO 617 Acarology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Systematics, morphology, physiology, and ecology of ticks and mites; management of acarine pests of humans, animals and plants; role of parasitic species in causation and transmission of diseases.

Prerequisite: ENTO 208 or equivalent. (Offered in 2010-2011 and alternate years thereafter.)**ENTO 618 Medical and Veterinary Entomology****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Taxonomy, biology and epidemiological role of insects and other arthropods that directly and/or indirectly affect the health and well-being of humans and animals.

Prerequisite: Graduate classification or approval of instructor.**ENTO 619 Insect Toxicology****Credits 3. 3 Lecture Hours.**

Classification and properties of major types of insecticides; chemistry, metabolism and mode of action; selectivity, use hazards, residues and resistance; environmental problems: biological magnification, persistence and effects on non-target organisms.

Prerequisites: One course in organic chemistry and ENTO 615 or approval of instructor.**ENTO 625/GEOG 625 Landscape Ecology****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Study of structure, function and change in a heterogeneous land area composed of interacting ecosystems; examine basic ecological principles dealing with landscape structure.

Prerequisite: Approval of instructor.**Cross Listing:** GEOG 625/ENTO 625.**ENTO 626/VIBS 626 Methods in Vector-Borne Disease Ecology****Credits 3. 1 Lecture Hour. 5 Lab Hours.**

Methodological understanding of how vector-borne disease are studied in the field and the laboratory; hands-on exploration of the ecology of disease systems in a one health framework; concepts of design, execution, and presentation of research projects; outdoor field work and bio-safety level 2 laboratory.

Cross Listing: VIBS 626/ENTO 626.**ENTO 628 Arthropod Genomes and Gene Expression****Credits 3. 3 Lecture Hours.**

Introduction to the vocabulary and experimental procedures routinely used for molecular genetic studies using arthropod systems as model examples; discussion of germ-line transformation, transient gene expression, and the analysis of tissue-specific and genome-wide gene expression.

Prerequisite: GENE 301 or equivalent.**ENTO 630 Insect Interactions with Microbes and Plant Hosts****Credits 3. 3 Lecture Hours.**

Concepts on phytophagous piercing/sucking insects, their complex interactions with their host plants and associated microbes, including transmission of plant pathogens.

Prerequisites: Graduate classification or approval of instructor.**ENTO 631 Principles of Integrated Pest Management****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

IPM history, conceptual foundations and basic principles; human practices aimed to reduce human carbon and chemical footprints on our planet; a series of pest control efforts towards a more sustainable agriculture.

Prerequisite: Graduate classification or approval of instructor.**ENTO 632 Professional Grant and Contract Writing in Entomology****Credits 3. 3 Lecture Hours.**

Scientific and academic professional development; art of CV and grant writing; process of peer review evaluations of work.

Prerequisite: Graduate classification or approval of instructor.**ENTO 635 Vector-Borne Disease Management and Response In Human and Animal Systems****Credits 3. 3 Lecture Hours.**

Integration of arthropod vector biology and surveillance with response and management of vector-borne disease outbreaks; complex interactions of diverse authorities in vector-borne disease management and response; participation in designing, operating and assessing outbreak response and management plans; capstone experience in the Vector Biology and Vector-Borne Disease Response certificate.

Prerequisite: ENTO 618.**ENTO 681 Seminar****Credit 1. 1 Lecture Hour.**

Oral reports and discussions of current research and developments in entomology and related fields; designed to broaden understanding of problems in field and to stimulate research.

Prerequisite: Graduate classification.**ENTO 684 Professional Internship****Credits 1 to 4. 1 to 4 Other Hours.**

On-the-job training in the fields of pest identification, home and garden pest control, medical and veterinary pest control, and pest management of food and fiber crop pests.

Prerequisite: Graduate classification in the Master of Agriculture program in economic entomology or plant protection.**ENTO 685 Directed Studies****Credits 1 to 9. 1 to 9 Other Hours.**

Entomological problems not pertaining to thesis or dissertation. May be repeated for credit.

Prerequisites: Graduate classification with major or minor in entomology; approval of department head.**ENTO 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of entomology. May be repeated for credit.

Prerequisite: Graduate classification.**ENTO 690 Theory of Research****Credit 1. 1 Lecture Hour.**

Examination of concepts and theories in entomological research including applications of novel technologies and experimental approach. May be repeated for credit.

Prerequisite: Graduate classification.**ENTO 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research problems on taxonomy, life histories, biological control, ecology and physiology of insects, and toxicology of insecticides.

Prerequisite: Graduate classification.

EPSY - Educational Psychology

EPSY 602 Educational Psychology

Credits 3. 3 Lecture Hours.

Cognitive analysis of academic skills and tests; current cognitive views of learning, memory, problem solving and development of skill and expertise; effects of aptitude, motivation and task environment on academic performance. Implications for assessment and instruction.

Prerequisite: Approval of department head.

EPSY 603 Qualitative Methodologies in Educational Research

Credits 3. 3 Lecture Hours.

Survey of qualitative research methodologies commonly used in educational research; purposes, epistemologies, data collection and analyses that distinguish different qualitative approaches to educational research; ethical and procedural challenges of collecting qualitative data in educational settings.

Prerequisite: Master's level classification.

EPSY 604 Career Counseling in Schools

Credits 3. 3 Lecture Hours.

Understanding the culturally competent career counseling theory, assessment and skills as applied to the diverse populations in schools.

Prerequisite: Approval of department head.

EPSY 605 Effects of Culture, Diversity, and Poverty on Children and Youth

Credits 3. 3 Lecture Hours.

Understanding of how the intersecting nature of culture, diversity, and poverty impact adjustment outcomes in children and youth; comprehension of our own belief systems; exploration of disparities in education and mental health across ethnically, culturally and social economically diverse groups; strategies for alleviating educational and mental health disparities.

Prerequisite: Graduate classification.

EPSY 606 Motivation and Emotion for Optimal Learning and Performance

Credits 3. 3 Lecture Hours.

Role of motivation and emotion in human learning and performance; major theories and empirical research relevant to motivation and emotional impacts of learning, performance, or functioning in a variety of situations, contexts, and cultures; content applied across multiple disciplines including education, counseling or therapeutic outcomes, achievement performance in school, art, music and sports.

Prerequisite(s): EPSY 602 or approval of instructor; graduate classification.

EPSY 618 Neurodevelopment and Genetic Disorders in Children

Credits 3. 3 Lecture Hours.

Comprehensive coverage of a broad array of neurodevelopment and genetic disorders in children; emphasis on cognitive and emotional sequelae of these disorders and their relationship to medical, psychological, and educational interventions.

Prerequisite: Graduate classification; approval of department head.

EPSY 619 Nature and Needs of the Gifted and Talented

Credits 3. 3 Lecture Hours.

Psychological characteristics of the gifted and talented; introduction to identification techniques, educational programs, instructional approaches and special problems.

Prerequisite: Approval of department head.

EPSY 621 Clinical Neuropsychology

Credits 3. 2 Lecture Hours. 2 Lab Hours.

Surveys brain-behavior relationships with an emphasis on understanding the brain as an interdependent, systemic network; administer and score the Halstead-Reitan Neuropsychological Test Battery.

Prerequisites: Graduate classification; approval of department head.

EPSY 622 Measurement and Evaluation in Education

Credits 3. 3 Lecture Hours.

Principles of psychological testing applied to education; uses and critical evaluation of achievement and aptitude, interest, and personality tests and performance in educational settings.

Prerequisite: Approval of department head.

EPSY 623 Social and Emotional Development of the Gifted and Talented

Credits 3. 3 Lecture Hours.

Theoretical models and patterns of social and emotional development among the gifted and talented through adolescence; implications and strategies for educators.

Prerequisite: Approval of department head.

EPSY 624 Creative Thinking

Credits 3. 3 Lecture Hours.

Development of personal creativity across fields of endeavor; analysis of creative potential, including psychometric assessment; experience of methods for stimulating creative processing and productivity.

Prerequisite: Approval of department head.

EPSY 625 Advanced Psychometric Theory

Credits 3. 3 Lecture Hours.

Psychometric theory, planning, construction, analysis, and evaluation of written and performance tests; item analysis, norms, reliability, and validity (including factor analytic) studies; item response theory.

Prerequisites: EPSY 640; approval of department head.

EPSY 626 At-Risk Hispanic Families and Their Young Children

Credits 3. 3 Lecture Hours.

Provides educational practitioners and related personnel with the conceptual and theoretical foundations for understanding the nature and impact of exposure to childhood risks on literacy, physical and mental health development of Hispanic families and their young children within developmental framework.

Prerequisites: Graduate classification; approval of department head.

EPSY 627 Structured Personality Assessment in Counseling

Credits 3. 3 Lecture Hours.

Personality evaluation using structured assessment instruments; variety of self-report personality inventories; the Minnesota Multiphasic Personality Inventory.

Prerequisites: EPSY 622; approval of department head.

EPSY 628 The Rorschach Technique with Children and Adolescents

Credits 3. 3 Lecture Hours.

Analysis of the Rorschach Technique; basic issues in projective assessment, scoring, interpreting and analyzing the Rorschach, with an emphasis on its clinical use with children and adolescents.

Prerequisite: Approval of instructor and department head.

EPSY 629 Educational Planning for the Gifted and Talented

Credits 3. 3 Lecture Hours.

Theoretical issues confronting educators involved in program development for gifted and talented children and adolescents; analysis of educational perspectives and instructional implications.

Prerequisites: Graduate classification and approval of department head.

EPSY 630 Single-Case Experimental Design**Credits 3. 3 Lecture Hours.**

Teaches measurement, design, implementation, and analysis skills to conduct research with single-subject design; review and summarize the quality of single-case literature, plan and implement AB designs.

Prerequisites: Approval of instructor and department head.

EPSY 631 Program Evaluation**Credits 3. 3 Lecture Hours.**

Learning of key evaluation skills such as establishing focus with client, posing evaluation questions, data collection techniques, designing for internal validity, data aggregation; scenario practice.

Prerequisite: EPSY 635 or equivalent.

EPSY 633 Qualitative Research Design and Data Collection**Credits 3. 3 Lecture Hours.**

Introduction to qualitative designs used to answer educational, psychological, or social research questions; historical foundations, epistemologies and essential elements of prevalent qualitative research designs; methods of collecting qualitative data including interviews, naturalistic observation, participant-observation, and stimulated recall procedures.

Prerequisites: Graduate classification; approval of department head.

EPSY 634 Educational Neuroscience**Credits 3. 3 Lecture Hours.**

Human learning from a biological perspective; fundamentals of genetics, neuroscience and the principles used to better understand the conditions in which brains develop and function optimally; biological substrates of emotions and motivation, as well as executive functions (e.g. working memory, attentional control) and skills related to language and mathematics; neuroscience and application to atypical learners; emotional, learning and other disorders that make learning and succeeding in educational contexts more challenging.

Prerequisites: Graduate classification; approval of department head.

EPSY 635 Educational Statistics**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Introduction to the theory and application of statistical methods in behavioral science research with emphasis on classroom applications.

Prerequisite: Approval of instructor.

EPSY 636 Techniques of Research**Credits 3. 3 Lecture Hours.**

Fundamental concepts and tools of research applied to psychological and educational problems; rationale of research, analysis of problems, library skills, sampling, appraisal instruments, statistical description and inference, writing the research report and representative research designs.

Prerequisite: Approval of department head.

EPSY 637 Qualitative Grounded Theory Methodologies**Credits 3. 3 Lecture Hours.**

Methods of collecting qualitative data to answer educational or psychological questions using Grounded Theory methodologies; analysis and interpretation of data using Grounded Theory methodologies.

Prerequisites: Graduate classification; EPSY 633 or equivalent introductory course in qualitative methods.

EPSY 640 Statistical Analysis in Educational Research I**Credits 3. 3 Lecture Hours.**

Preparation in data analysis techniques for experimental and non-experimental designs.

Prerequisites: EPSY 636 or equivalent; approval of department head.

EPSY 641 Statistical Analysis in Educational Research II**Credits 3. 3 Lecture Hours.**

Preparation in more advanced data analysis techniques for experimental and non-experimental designs.

Prerequisites: EPSY 640; approval of instructor and department head.

EPSY 642 Meta-Analysis of Behavioral Research**Credits 3. 3 Lecture Hours.**

Principles and use of quantitative techniques for research integration in education and other behavioral disciplines; computer-based and branching literature searches, coding protocols, theory of effect size estimation, analysis and reporting.

Prerequisites: EPSY 435 or STAT 651; EPSY 636 or equivalent; EPSY 640 or equivalent.

EPSY 643 Applied Multivariate Methods**Credits 3. 3 Lecture Hours.**

This seminar presents various techniques for applied multivariate modeling of phenomena in educational psychology.

Prerequisites: EPSY 640 and EPSY 641 or approval of instructor; approval of department head.

EPSY 644 Histories of Psychology**Credits 3. 3 Lecture Hours.**

Comprehensive understanding of the histories, including theoretical foundations, pivotal contributions and contributors, within the field of psychology that have led to current conceptualizations and applied, professional practice of psychology.

Prerequisites: Graduate classification; approval of instructor; approval of department head.

EPSY 645 Creative Genius**Credits 3. 3 Lecture Hours.**

Analysis of patterns of development among highly creative individuals; required dramatic presentation on the life and accomplishments of a selected individual through the use of the soliloquy stage technique.

Prerequisite: Graduate classification; approval of department head.

EPSY 646 Issues in Child and Adolescent Development**Credits 3. 3 Lecture Hours.**

Theoretical orientations, issues, research strategies and empirical findings of developmental psychology relevant to education.

Prerequisites: PSYC 634 or equivalent; approval of department head.

EPSY 647 Lifespan Development**Credits 3. 3 Lecture Hours.**

Issues and models of studying lifespan development; research and theory of lifespan development; comprehensive and current foundation of lifespan development.

Prerequisite: Graduate classification; approval of department head.

EPSY 648 Intelligence and Creativity**Credits 3. 3 Lecture Hours.**

Considers theory, research, methodologies and issues related to the definition, identification and assessment of intelligence, and assessment of intelligence and creativity; addresses theories of intelligence and creativity; methodologies and issues related to assessment of both; relationship between them; and frameworks for fostering creativity; considers implications/applications of theory and research on effective teaching practices for creativity.

Prerequisite: Graduate classification; approval of department head.

EPSY 650 Multiple Regression and Other Linear Models in Education Research**Credits 3. 3 Lecture Hours.**

Overview of basic and advanced topics in regression analysis; equal emphasis on developing procedural knowledge, statistical theory, research designs, and practical issues and methods using statistics in empirical research; basis of linear regression models and logistic regression models.

Prerequisites: EPSY 641 or STAT 652 or SOCI 631; graduate classification; approval of department head.

EPSY 651 Theory of Structural Equation Modeling**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Introduction to the theory and application of structural equation modeling.

Prerequisites: EPSY 640 and EPSY 641 or STAT 650 and STAT 651; graduate classification; approval of department head.

EPSY 652 Theory of Hierarchical Linear Models**Credits 3. 3 Lecture Hours.**

Introduction to the theory and application of hierarchical linear models.

Prerequisite: EPSY 640, EPSY 641 or STAT 651, STAT 652, or any equivalent courses; some knowledge on ANOVA and Multiple Regression; graduate classification; approval of department head.

EPSY 653 Advanced Structural Equation Modeling**Credits 3. 3 Lecture Hours.**

Advanced topics of structural equation models; includes exploratory factor analysis under the structural equation modeling framework, testing factorial invariance, structural equation models with categorical observed variables, multilevel structural equation models, latent growth models, and growth mixture models.

Prerequisites: EPSY 651 and EPSY 652.

EPSY 654 Longitudinal Data Analysis**Credits 3. 3 Lecture Hours.**

Review of traditional approaches to longitudinal data analysis (e.g., MANOVA); consideration of newer approaches including multilevel modeling (MLM) and latent growth modeling (LGM) and their advantages in analyzing longitudinal data.

Prerequisite: EPSY 651 and EPSY 652.

EPSY 655 Item Response Theory**Credits 3. 3 Lecture Hours.**

Advanced measurement topics in item response models; theoretical foundations and practical applications of IRT models; dichotomous and polytomous IRT models including Rasch model (IPL model), 2-PL model, 3-PL model, rating scale model, partial credit model, and graded response model; analysis based on each model illustrated using BILOG-MG, PARSCALE, and M-plus.

Prerequisite: EPSY 625.

EPSY 656 Survey Instrument Development**Credits 3. 3 Lecture Hours.**

Experiences in developing instruments to measure cognition, attitude or behavior; issues and practices relating to construct specification, instrument design and administration; emphasis on analysis and summary of validity study data.

Prerequisites: Graduate classification; EPSY 640 or equivalent; approval of department head.

EPSY 659 Practicum in Educating the Gifted and Talented**Credits 3. 1 Lecture Hour. 6 Other Hours.**

Theory and strategies for instruction and guidance of the gifted and talented through a supervised experience in a laboratory setting with gifted and talented children and/or adolescents. May be taken three times for credit.

Prerequisite: Approval of instructor and approval of department head.

EPSY 660 Single Case Experimental Design Research Methodology**Credits 3. 3 Lecture Hours.**

Teaches critical evaluation of single-case experimental design; development of logic models, socially significant research questions, and complex research designs; advanced topics in design, rigor, replication, reliability, validity and measurement in single-case experimental designs.

Prerequisites: EPSY 635 and EPSY 636.

EPSY 673 Learning Theories**Credits 3. 3 Lecture Hours.**

Comprehensive study of classical and current learning theories; their significance to modern education.

Prerequisite: Approval of department head.

EPSY 679 Research on Teacher Effectiveness**Credits 3. 3 Lecture Hours.**

Considers theory, research and methodologies related to the definition and identification of effective teaching practices; practice, implications and applications of theory and research in educational psychology on effective teaching practices.

Prerequisites: Graduate classification; approval of department head.

EPSY 682 Seminar in...**Credit 1. 1 Other Hour.**

Knowledge, skills and attitudes in special education, counseling, psychological foundations of education and school psychology. Specific topics are announced for each seminar offered. May be taken more than once but not to exceed 6 hours of credit.

Prerequisite: Approval of department head.

EPSY 683 Field Practicum in...**Credits 1 to 15. 1 to 15 Other Hours.**

Supervised experience in professional employment settings in educational psychology. Wide range of practical experiences and activities as listed below that are closely supervised by departmental faculty. Repeatable to 15 hours total.

Prerequisite: Approval of instructor and department head.

EPSY 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Limited to advanced doctoral students; University-directed experience in a professional employment setting; full-time participation and responsibility in experiences related to career specializations in counseling or school psychology. Repeatable to 9 hours total.

Prerequisites: Approval of department head six weeks prior to registration; approval of department head.

EPSY 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems.

Prerequisite: Approval of department head.

EPSY 688/CPSY 688 Research Proposal Development**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

This seminar models the processes of developing and defending research proposals.

Prerequisites: EPSY 640 and EPSY 641 or approval of instructor; approval of department head.

Cross Listing: CPSY 688/EPSY 688.

EPSY 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of educational psychology. May be repeated for credit.

Prerequisite: Approval of department head.

EPSY 690 Theory of Educational Psychology Research**Credits 3. 3 Lecture Hours.**

Theory and design of research problems and experiments in various subfields of educational psychology; communication of research proposals and results; evaluation of current research of faculty and students and review of current literature. May be repeated for credit.

Prerequisite: Approval of instructor and department head.

EPSY 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of department head.

ESET - Electronic Sys Eng Tech

ESET 633 Advanced Wireless Instrumentation and Control**Credits 3. 3 Lecture Hours.**

Short range wireless communication, instrumentation and control for industrial Internet of Things (IoT); wireless sensor networks, information processing and transmission; analysis of requirements on reliability, latency, security, power, signal conditioning and processing, and control; system and subsystem performance evaluation; cloud computing, data analytics for system optimization and prognosis.

Prerequisites: Graduate classification or approval of instructor.

ESET 644 Embedded Intelligent System Design**Credits 3. 3 Lecture Hours.**

Embedded intelligent system design; investigate artificial intelligent systems; advanced embedded system designs; use of high performance microcontroller and processor.

Prerequisites: Graduate classification or approval instructor.

ESET 681 Seminar**Credit 1. 1 Other Hour.**

Selected topics presented by the faculty, students and outside speakers.

Prerequisites: Graduate classification or approval of instructor.

ESET 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Directed study of topics not within scope of thesis research and not covered by other formal courses. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.

ESET 689 Special Topics in...**Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of engineering technology. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.

ESET 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.

ESET 692 Professional Study**Credits 1 to 23. 1 to 23 Other Hours.**

Approved professional study of project.

Prerequisites: Approval of instructor.

ESSM Ecosystem Science & Mgmt

ESSM 600 Principles of Ecosystem Science and Management**Credits 3. 3 Lecture Hours.**

Ecological foundations for sustained use of natural resources; climatic, edaphic, biotic and cultural factors in land resource allocation; land and cover viewed with respect to population dynamics, succession and climax, gradients and graduation, equilibria and imbalance.

Prerequisite: Graduate classification in agriculture or in allied subject.

ESSM 601 Ecosystem Stewardship**Credits 3. 3 Lecture Hours.**

Integrates ecological concepts of resilience, sustainability, transformation and vulnerability within a framework of ecosystem stewardship to support human well-being in a rapidly changing world; emphasizes social-ecological systems. adaptive management, and valuation of ecosystem services as mechanisms to strengthen management and policy recommendations supporting ecosystem stewardship.

Prerequisite: Graduate classification.

ESSM 604 Changing Natural Resource Policy**Credits 3. 3 Lecture Hours.**

Process through which environmental policies are changed; theories of social and political change; using these theories along with original research on environmental policy problems to create and implement plans for changing environmental policies in communities.

Prerequisite: Graduate classification.

ESSM 605 The Research Process**Credits 2. 2 Lecture Hours.**

Nature and objectives of graduate work, the scientific method and basic and applied research. Introduction to design of experiments and analysis of data; principles of organization of project proposals, theses and scientific reports.

ESSM 610 Rangeland Resource Management**Credits 3. 3 Lecture Hours.**

Basic concepts and theories of rangeland resource management; trends in range classification, grazing management and improvement practices.

Prerequisite: Graduate classification in agriculture or related subject matter areas.

ESSM 611 Grazing Management and Range Nutrition**Credits 3. 3 Lecture Hours.**

Nutritional ecology of domestic and wild herbivores on rangelands; vegetation and animal response to various grazing management practices; diet selection, quality, intake and supplementation of herbivores.

ESSM 612 Rangeland Vegetation Management**Credits 3. 3 Lecture Hours.**

Principles of rangeland brush and weed control with mechanical, chemical, burning and biological methods; interrelationships of brush management with grazing, wildlife and watershed management; planning and economic analysis of range improvement practices.

ESSM 620 Plant and Range Ecology**Credits 3. 3 Lecture Hours.**

Investigation of community/ecosystem/landscape distribution patterns, structure, spatial/temporal organization and function, paleoecology, ecological succession, disturbance regimes, ecological diversity and classification schemes. North American rangelands (grasslands, shrublands, deserts, wetlands, etc.) stressed but world ecosystems reviewed.

Prerequisites: RENR 205; RENR 215 or equivalent; graduate classification.

ESSM 621 Physiological Plant Ecology**Credits 3. 3 Lecture Hours.**

Investigation of physiological mechanisms influencing ecological patterns and processes, including plant acclimation and adaptation in contrasting habitats, abiotic controls on species productivity and distribution, relevant conceptual and experimental approaches, and integration among ecological scales.

Prerequisites: RENR 205 or MEPS 313 or equivalent; graduate classification.

ESSM 622 Biogeochemistry of Terrestrial Ecosystems**Credits 3. 3 Lecture Hours.**

Biogeochemical cycles of carbon, nitrogen, sulfur and phosphorus and their interaction with biotic and abiotic processes; biogeochemical processes investigated at the global level and in several types of terrestrial ecosystems; addressing global climate change, deforestation, acid precipitation, ozone depletion.

Prerequisites: RENR 205 or equivalent; graduate classification.

ESSM 624 Terrestrial Ecosystems and Global Change**Credits 3. 3 Lecture Hours.**

Identify the physical and biological principles governing the structure and function of terrestrial ecosystems in an earth-system context; analyze how plants and microorganisms respond to environmental change and affect global carbon, nutrient, and water cycles; evaluate ecosystem response to global change, including rising carbon dioxide, climate warming, and human impacts.

Prerequisite: Graduate classification.

ESSM 626 Fire and Natural Resources Management**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Behavior and use of fire in the management of natural resources; principles underlying the role of weather, fuel characteristics and physical features of the environment related to development and implementation of fire plans.

Prerequisites: Graduate classification and approval of instructor.

ESSM 628 Wetland Delineation**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Application of the 1987 Wetland Delineation Manual in use by the Army Corps of Engineers; field indicators of hydrophytic vegetation, hydric soils, wetland hydrology, methods for making jurisdictional determination in non-disturbed and disturbed areas, recognition of problem wetlands and technical guidelines for wetlands.

Prerequisite: Graduate classification or approval of instructor.

ESSM 630 Restoration Ecology**Credits 3. 3 Lecture Hours.**

Review and discuss fundamental concepts, current literature, and contemporary topics relating to ecological restoration. This includes the theoretical development of restoration ecology and its application. The relationship with conservation biology will be explored. The goal is to inform, exchange views, and develop critical thinking skills through case studies.

Prerequisite: Graduate classification.

ESSM 631 Ecological Restoration of Wetland and Riparian Systems**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

How wetland and riparian areas link terrestrial and aquatic systems and function hydrologically and ecologically within watersheds; integrated approaches for restoration of degraded wetland and riparian systems; improving water resources through vegetation management with a special interest in rangelands.

Prerequisites: RENR 205 or equivalent and WFSC 428 or equivalent.

ESSM 633 Coastal Processes and Ecosystem Management**Credits 3. 3 Lecture Hours.**

Exploration of current state of knowledge in coastal ecosystem science with integrated view across sub-fields of coastal ecology, geomorphology, biology, law, policy, economics and engineering; focus on techniques to manage, construct and restore ecosystems.

Prerequisite: Graduate classification.

ESSM 635 Ecohydrology**Credits 3. 3 Lecture Hours.**

Framework for understanding how plants and animals affect the water cycle; examine and explore the water cycle in all of its aspects with the idea of understanding how changes in land cover may influence the water cycle; implications for both upland and riparian systems.

Prerequisite: Graduate classification.

ESSM 636 Wildland Watershed Management**Credits 3. 3 Lecture Hours.**

Elements of watershed management and principles and practices of wildland management for protection, maintenance and improvement of water resources values; current literature and research advances.

ESSM 647 Range Grasses and Grasslands**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Basic concepts of grass structure and classification, recent advances in agrostological research, genetic and ecological basis for patterns of variation and evolution in grasses. Offered Spring Semester of even numbered years.

ESSM 648 Wetland Plant Taxonomy**Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Interpretation of plant morphologies for keying and the identification of wetland plants from prime habitats; plant communities including the plant's adaptation to variation in salinity and soils; identification of inconspicuous flowered plant species including sedges, rushes and grasses.

Prerequisite: RLEM 304 or approval of instructor. Offered Fall Semester of even numbered years.

ESSM 651 Geographic Information System for Resource Management
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Geographic Information System (GIS) approach to the integration of spatial and attribute data to study the capture, analysis, manipulation and portrayal of natural resource data; examination of data types/formats, as well as the integration of GIS with remote sensing and Global Positioning System; laboratory includes extensive use of GIS applications to conduct analyses of topics in natural resources.

Prerequisites: Graduate classification.

Cross Listing: BAEN 651 and RENR 651.

ESSM 652 Advanced Topics in Geographic Information Systems
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Advanced GIS topics with a focus on modeling actual GIS applications including relational and database theory, design and implementation and its connection to GIS; surface analysis with digital terrain models; and an introduction to spatial statistics.

Prerequisite: ESSM 651 or BAEN 651.

ESSM 655 Remote Sensing of the Environment
Credits 3. 2 Lecture Hours. 1 Lab Hour.

Remote sensing for the management of renewable natural resources; use of aerial photography and satellite imagery to detect, identify and monitor forest, range and agricultural resources; utilize remotely sensed data as input to computerized information management systems.

Prerequisite: Graduate classification.

ESSM 656 Advanced Remote Sensing
Credits 3. 2 Lecture Hours. 1 Lab Hour.

Advanced techniques for information extraction using airborne and satellite imagery; active and passive sensors characteristics; customizing and developing image processing tools for remote sensing applications for a broad range of sensors and applications.

Prerequisites: ESSM 655, RENR 444, GEOG 651, GEOG 661.

ESSM 660 Landscape Analysis and Modeling
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Introduction to quantitative methods of landscape analysis and modeling for applications in natural resource conservation and management; quantification of landscape composition and configuration; spatial statistical methods for characterizing landscape pattern; methods for hypothesis testing with spatial data; landscape modeling approaches and applications; current literature and software.

Prerequisite: Approval of instructor.

ESSM 663/SCSC 663 Applied Spatial Statistics
Credits 4. 3 Lecture Hours. 2 Lab Hours.

An introduction to the theory and practice of spatial statistics as applied to the natural resources. Spatial analyses focusing primarily on ordinary kriging, point processes, and lattice data.

Prerequisites: MATH 141, MATH 142; STAT 651; or equivalents; ESSM 651 preferred.

Cross Listing: SCSC 663/ESSM 663.

ESSM 665 Computer Programming for Natural Resources Applications
Credits 3. 2 Lecture Hours. 2 Lab Hours.

An introduction to programming concepts and applications; elements of Visual Basic programming including data types, control and program structure; introduction to objects and object-oriented programming; macro and applications development; automation of GIS programming through the use of macros.

Prerequisites: Approval of instructor.

ESSM 671 Ecological Economics
Credits 3. 3 Lecture Hours.

Study of the relationships between ecosystems and economic systems; understanding the effects of human economic endeavors on ecological systems and how the ecological benefits and costs of such activities can be quantified and internalized.

Prerequisite: Graduate Classification.

Cross Listing: AGECE 659 and RENR 659.

ESSM 672/RENRR 660 Environmental Impact Analysis for Renewable Natural Resources
Credits 3. 3 Lecture Hours.

Analysis and critique of contemporary environmental analysis methods in current use; environmental impact statements; national policies; political, social and legal ramifications as related to development and use of renewable natural resources.

Prerequisite: Graduate Classification.

Cross Listing: RENR 660/ESSM 672.

ESSM 676/RENRR 650 Leadership, Development and Management of Environmental NGOs
Credits 3. 3 Lecture Hours.

Trends and increasing power of NGOs in environment and sustainable development; understanding of the organizational structures, functions, planning and management processes of environmental NGOs; technical skills and leadership qualities for careers with environmental NGOs.

Prerequisite: Graduate Classification.

Cross Listing: RENR 650/ESSM 676.

ESSM 681 Seminar**Credit 1. 1 Lecture Hour.**

Reviews and discussions of current topics and advances in Ecosystem Science and Management.

Prerequisite: Graduate classification.

ESSM 684 Professional Internship**Credits 1 to 16. 1 to 16 Lecture Hours.**

On-the-job training in fields of ecosystem science and management.

Prerequisite: Graduate classification in an ecosystem science and management major.

ESSM 685 Directed Studies**Credits 1 to 9. 1 to 9 Lecture Hours.**

Investigations not included in student's research for thesis or dissertation.

Prerequisite: Graduate majors or minors in Ecosystem Science and Management.

ESSM 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of ecosystem science and management. May be repeated for credit.

Prerequisite: Graduate classification.

ESSM 691 Research**Credits 1 to 23. 1 to 23 Lecture Hours.**

Research for thesis or dissertation.

Prerequisite: Graduate majors in Ecosystem Science and Management.

EURO - European Studies

EURO 601 The Formation of the Republic of Letters

Credits 3. 3 Lecture Hours.

The beginnings of European culture in ancient Greece, its development into a Europe-wide civilization under the Roman Empire, and its survival as a common, Latin-based culture in the Middle Ages and Renaissance; deals with literature, the arts, and politics.

Prerequisite: Graduate classification.

EURO 602 The Rise of Modern Nation States

Credits 3. 3 Lecture Hours.

Process by which the traditional, Latin-based common culture of Europe is supplemented and supplanted by vernacular cultures tied to the rise of nation states, from the Baroque through the Enlightenment and Romanticism to the nineteenth century; deals with literature, the arts, and politics.

Prerequisite: Graduate classification.

EURO 603 Nationalism and European Integration

Credits 3. 3 Lecture Hours.

From the breakdown of civilization in the twentieth century to the determination, difficulties, and potential of reconstituting a common European culture in the post-national era; deals with literature, the arts, politics, film, press, and new media.

Prerequisite: Graduate classification.

EURO 604 European Avantgardes

Credits 3. 3 Lecture Hours.

An interdisciplinary examination of modernist currents in art, culture, and politics.

Prerequisite: Graduate classification.

EURO 605 European Cinema

Credits 3. 3 Lecture Hours.

An examination of the development of cinematic culture in Europe from the Lumiere brothers' invention of the cinematograph, to the development of national film cultures, to current trends in transnational filmic coproduction.

Prerequisite: Graduate classification.

EURO 606 History and Memory in Modern Europe

Credits 3. 3 Lecture Hours.

Explores artistic, cultural, and political representations of fundamental experiences in the shaping of modern Europe, such as the Holocaust, the Nazi occupation of Europe, and Soviet prison camps of the Gulag.

Prerequisite: Graduate classification.

EURO 607 Europe and Its Margins

Credits 3. 3 Lecture Hours.

Explores the interaction between European and neighboring cultures, such as those of North and Central Asia, the Middle East, North Africa, and the Atlantic in history.

Prerequisite: Graduate classification.

EURO 608 European Drama

Credits 3. 3 Lecture Hours.

Examines literary, social, and historical aspects of dramatic literature and performance in the context of different European cultures.

Prerequisite: Graduate classification.

EURO 610 Seminar in Classical Culture

Credits 3. 3 Lecture Hours.

Topics in Greek and Roman culture and civilization; readings in English. May be repeated for credit.

Prerequisite: Graduate classification.

EURO 620 Seminar in French Culture

Credits 3. 3 Lecture Hours.

Topics in French culture and civilization; readings in English. May be repeated for credit. **Prerequisite:** Graduate classification.

EURO 630 Seminar in German Culture

Credits 3. 3 Lecture Hours.

Topics in German outline and civilization; readings in English. May be repeated for credit.

Prerequisite: Graduate classification.

EURO 640 Seminar in Russian Culture

Credits 3. 3 Lecture Hours.

Topics in Russian culture and civilization; readings in English. May be repeated for credit.

Prerequisite: Graduate classification.

EURO 650 Seminar in Italian Culture

Credits 3. 3 Lecture Hours.

Topics in Italian culture and civilization; readings in English. May be repeated for credit.

Prerequisite: Graduate classification.

EURO 681 Proseminar

Credit 1. 1 Lecture Hour.

Student and faculty presentation of research fields, current issues, and research methods.

Prerequisite: Graduate classification.

EURO 685 Directed Studies

Credits 1 to 4. 1 to 4 Lecture Hours.

Individual problems or research or scholarly activity not pertaining to thesis or dissertation, or selected instruction not covered by other courses. Final documentation of directed study is required.

Prerequisites: Graduate classification; approval of department head.

EURO 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours.

Selected topics in an identified area of European Studies. May be repeated for credit.

EURO 691 Research

Credits 1 to 12. 1 to 12 Lecture Hours.

Thesis or dissertation research; credit given only upon acceptance of completed thesis or dissertation.

Prerequisite: Graduate classification.

FILM - Film Studies

FILM 658/ENGL 658 Topics in Film History

Credits 3. 3 Lecture Hours.

Topics in the history of the production, reception and institutional contexts of cinema; may focus on national cinemas, genres, movements, styles, film industries, film's relation to other media. May be taken three times for credit as content varies.

Prerequisites: Graduate classification.

Cross Listing: ENGL 658/FILM 658.

FILM 689 Special Topics in...

Credits 3. 3 Lecture Hours.

Selected topics in an identified area of film studies.

Prerequisite: Graduate classification or approval of instructor.

FILM 694 Gender and Genre**Credits 3. 3 Lecture Hours.**

Exploration and analysis of the ways in which a single literary and/or film genre resonates with gendered perspectives and sexual subjectivity. May be taken two times for credit.

Prerequisite: Graduate classification.**Cross Listing:** WGST 694/FILM 694.

FINC - Finance

FINC 601 Financial Analysis Practicum**Credits 1 to 6. 1 to 6 Lecture Hours. 1 to 6 Other Hours.**

Application of finance theory to careers in finance; development of practical skills for finance professionals, including proficiency with industry-standard software, databases and analytic products; operational, legal and ethical aspects of the financial industry; financial career planning. May be taken three times for credit.

Prerequisite: Admission to MS-FINC program.**FINC 602 Corporate Finance****Credits 3. 3 Lecture Hours.**

Theoretical development of principles of corporate financial management; application of principles to problems faced by financial officers, such as capital budgeting, cost of capital, capital structure, dividend policy, financial distress and corporate valuation.

Prerequisite: Admission to master of science in finance program or approval of Department Head.**FINC 603 Investments****Credits 3. 3 Lecture Hours.**

Theoretical development and application of principles of investment management; topics include measuring risk aversion, portfolio optimization, factor models, asset pricing models, bond pricing, term structure of interest rates, bond portfolio management and equity valuation.

Prerequisite: Enrollment limited to MS in FINC students or approval of Department Head.**FINC 604 Fixed Income Securities****Credits 3. 3 Lecture Hours.**

Economics and institutional analysis of bond markets and determinants of interest rates for bonds, including Treasury issues, federal agency issues, corporate bonds, municipal bonds, mortgage-backed and asset-backed securities; features of fixed income securities from microeconomic and macroeconomic perspectives; analysis of risk and return, valuation, term structure, trading strategies and credit risk.

Prerequisite: FINC 602 and FINC 603 or approval of Department Head.**FINC 605 Valuation and Financial Modeling****Credits 3. 3 Lecture Hours.**

Principles of value creation; definition of fundamental value, market value and replacement value; differences between well-established valuation approaches; applications to measuring the value of business organizations using rigorous applications of financial theory and accounting principles.

Prerequisite: FINC 602, FINC 603 and ACCT 610 or approval of Department Head.**FINC 606 Options, Futures, and Other Derivatives****Credits 3. 3 Lecture Hours.**

Understanding the four basic derivative contracts (forwards, futures, swaps, and options) and how they function; pricing contracts via arbitrage; examination of derivatives using risk management; examination of material from the point of view of the arbitrageur and hedger, as opposed to the speculator; examination of speculative trading strategies in the options market.

Prerequisite: FINC 603.**FINC 612 Finance for the Professional****Credits 1 to 4. 1 to 4 Lecture Hours.**

Focuses on investment and financing decisions in corporate firms; emphasis on principles, techniques and applications in corporate finance including risk and return, capital budgeting, discounted cash flow valuation, capital structure, and payout policy. Classification 6 students may not enroll in this course.

Prerequisite: ACCT 610 or equivalent; enrollment is limited to BUAD classification 7.**FINC 613 Finance for the Professional II****Credits 1 to 3. 1 to 3 Lecture Hours.**

Focus on advanced topics in domestic and international finance; analysis of dividend, capital structure and refinancing decisions; exposure to financial derivatives; foreign exchange rate determination and risk management.

Prerequisite: FINC 612. Enrollment is limited to BUAD classification 7.**FINC 629 Financial Management I****Credits 3. 3 Lecture Hours.**

Analysis of finance function, credit and equity markets, financing and dividend decisions; mechanics of financial analysis. Classification 6 students may not enroll in this course.

Prerequisites: FINC 612 or FINC 635; ACCT 610 or ACCT 640.**FINC 630 Financial Management II****Credits 3. 3 Lecture Hours.**

Basic concepts of finance applied to solution of business problems using case studies; financial analysis skills further developed and refined; investment and financing decisions analyzed. Classification 6 students may not enroll in this course.

Prerequisite: FINC 629.**FINC 632 Investment Management****Credits 3. 3 Lecture Hours.**

Introductory course in investments; nature and functioning of securities markets; various investment media and tools for analysis of these media; analysis of debt and equity securities. Alternative trading strategies evaluated. Classification 6 students may not enroll in this course.

Prerequisite: FINC 612 or FINC 635.**FINC 633 Seminar in Commercial Banking****Credits 3. 3 Lecture Hours.**

Cases and problems on contemporary management challenges and problem-solving techniques in commercial banks.

Prerequisite: Admission to Mays Commercial Banking Program.**FINC 634 Commercial Credit Analysis****Credits 3. 3 Lecture Hours.**

Techniques for assessing the ability and willingness of business firms to service debts; regulatory and ethical requirements for structuring and documenting commercial bank loans to protect interests of shareholders, depositors and deposit insurers.

Prerequisite: Admission to Mays Commercial Banking Program.

FINC 635 Survey of Finance**Credits 3. 3 Lecture Hours.**

Financial markets; the investment banking process; interest rates; financial intermediaries and the banking system; financial instruments; time value of money concepts; security valuation and selection; international finance. May not be used for elective credit by a master's candidate in business administration.

Prerequisite: Graduate classification.

FINC 636 Marketing Financial Products and Services**Credits 3. 3 Lecture Hours.**

Marketing and sales processes for presenting major banking products and services to clients and prospects of commercial banks; strategies for successfully positioning a commercial bank in its trade area; the consultative sales process and effective presentation skills.

Prerequisite: Admission to Mays Commercial Banking Program.

FINC 640 Macro Finance**Credits 3. 3 Lecture Hours.**

Recent developments in the nature and causes of financial crises; the role of money; financial liquidity; financial leverage; financial stability regulation; unconventional monetary policy and macroprudential policy.

Prerequisites: FINC 351, FINC 603, or FINC 632; FINC 361, FINC 602, or FINC 629.

FINC 641 Valuation**Credits 3. 3 Lecture Hours.**

Theory and application of various approaches to valuation; measuring and managing the value of corporations; principles of value creation; fundamental valuation methodology; application of value creation principles to managerial problems; special cases and complex valuation issues.

Prerequisites: ACCT 229 or ACCT 610 or ACCT 640; FINC 351 or FINC 632; FINC 361 or FINC 629.

FINC 642 Analysis of Money and Capital Markets**Credits 3. 3 Lecture Hours.**

U.S. money and capital markets; changes in supply of and demand for money and capital as they influence the policies of financial intermediaries, fiscal and monetary authorities and nonfinancial firms. Interest rates; factors affecting their level and structure; flow of funds in the U.S. economy. Classification 6 students may not enroll in this course.

Prerequisite: FINC 612 or FINC 635.

FINC 643 Commercial Bank Management**Credits 3. 3 Lecture Hours.**

Financial management problems of commercial bank management including raising funds, investing funds and making loans; nontraditional bank activities; emphasis on actual case situations. Classification 6 students may not enroll in this course.

Prerequisite: FINC 642.

FINC 644 Funding New Ventures**Credits 3. 3 Lecture Hours.**

Introduction to the general phenomena of small business and entrepreneurship; central focus provides students an understanding of entrepreneurship and the financing of entrepreneurial ventures; addresses the types of financing available at different stages of the new venture. Classification 6 students may not enroll in this course.

FINC 645/IBUS 645 International Finance**Credits 1 to 3. 1 to 3 Lecture Hours.**

Problems confronted by financial managers of firms with international business operations; international money and capital markets; exchange rate risks and political risks. May be repeated for up to 3 hours credit. Classification 6 students may not enroll in this course.

Prerequisite: FINC 612 or FINC 635.

Cross Listing: IBUS 645/FINC 645.

FINC 646 Technical Analysis of Financial Markets**Credits 3. 3 Lecture Hours.**

Use of price, volume and other non-fundamental, market and behavioral data to analyze and predict security prices; emphasis on pattern recognition and correlation analysis over theory and casual analysis; application of technical analysis as an investment discipline for institutional portfolio management; principles, terminology, techniques, and emerging theories of technical analysis.

Prerequisites: FINC 351 or FINC 632; FINC 361 or FINC 629.

FINC 647/ACCT 647 Financial Statement Analysis**Credits 3. 3 Lecture Hours.**

Analytical approach to financial statements; application of finance and accounting principles relevant to the analysis of financial statements. Classification 6 students may not enroll in this course.

Prerequisites: FINC 612 or FINC 635; ACCT 610 or ACCT 640.

Cross Listing: ACCT 647/FINC 647.

FINC 648 Advanced Investments**Credits 3. 3 Lecture Hours.**

Application of finance theory to complex investment problems; implementation of asset pricing models, portfolio theory and arbitrage strategies; implications of principles of market efficiency and behavioral finance for selection of individual securities and portfolios.

Prerequisites: FINC 351 or FINC 632; FINC 361 or FINC 629.

FINC 649 Financial Modeling**Credits 3. 3 Lecture Hours.**

Computer-based modeling of contemporary problems in investments and corporate finance including asset pricing, portfolio optimization, valuation, capital budgeting, cost of capital, risk assessment, and option pricing; using models to evaluate financial decision variables and alternative investment strategies.

Prerequisites: FINC 351, FINC 603, or FINC 632; FINC 361, FINC 602, or FINC 629; ACCT 327 or equivalent.

FINC 651 Financial Valuation**Credits 1 to 3. 1 to 3 Lecture Hours.**

Theory and application of various approaches to valuation; measuring and managing the value of corporations; principles of value creation; fundamental valuation methodology; application of value creation principles to managerial problems; special cases and complex valuation issues.

Prerequisites: Enrollment is limited to Classification 7 MBA students.

FINC 654 Behavioral Finance**Credits 3. 3 Lecture Hours.**

Psychological and sociological aspects of financial decision making for individuals, institutions and corporations; impacts of psychological factors on the financial markets, including anomalies in asset prices and stock market bubbles and crashes.

Prerequisites: FINC 351, FINC 603, or FINC 632; FINC 361, FINC 602, or FINC 629.

FINC 660 Fixed Income Analysis**Credits 3. 3 Lecture Hours.**

Characteristics of fixed income securities including Treasury issues, federal agency issues, corporate and municipal bonds, mortgage-backed and asset-backed securities; institutional features fixed income markets; risks of bond investing; fixed income valuation; term structure; trade strategies; modeling and assessing credit risks; hedging with fixed income derivatives.

Prerequisites: FINC 351 or FINC 603 or FINC 632; FINC 361 or FINC 602 or FINC 629.

FINC 661 Trading Risk Management**Credits 3. 3 Lecture Hours.**

Focuses on Mid-office risk management strategies using the energy markets as a focus; develops understanding of commodity market behavior, use of forwards and options for risk management, risk management reporting, Greeks and simulation-based VaR analysis. Classification 6 students may not enroll in this course.

Prerequisite: FINC 632.

FINC 662 Energy Finance**Credits 3. 3 Lecture Hours.**

Analysis of financial aspects of the energy industry from exploration to delivery with emphasis on upstream segment; identification of differences in upstream, midstream and downstream; evaluation of profitability of key financial decisions.

Prerequisite: Enrollment is limited to Classification 7 MBA students.

FINC 663 Trading and Markets**Credits 3. 3 Lecture Hours.**

Issues relating to securities trading and securities markets; discusses why and how people trade, and the operation, structure, and regulation of securities markets; focus on equity markets; comparisons to the markets for derivatives and other securities. Classification 6 students may not enroll in this course.

Prerequisite: FINC 632.

FINC 664 Active Portfolio Management**Credits 3. 3 Lecture Hours.**

Analysis of investment tactics designed to earn abnormal returns; identification and evaluation of active strategies that exploit capital market anomalies and market inefficiencies; portfolio structuring, stock and sector selection, performance measurement, attribution analysis and benchmarks in inefficient markets.

Prerequisites: Graduate classification; classification 6 students may not enroll in this course; FINC 421 or FINC 632; FINC 434 or FINC 629.

FINC 665 Derivative Securities**Credits 3. 3 Lecture Hours.**

Valuation of financial forward contracts, futures contracts and basic options; course covers valuation and behavior of interest rate and exchange rate forward curves, fixed-for-float transactions, stock options, and index based-options. Classification 6 students may not enroll in this course.

Prerequisite: FINC 632.

FINC 666 Wall Street, Investment Banking and the Financial Markets**Credits 3. 3 Lecture Hours.**

Provides students an opportunity to visit Wall Street and the heart of U.S. financial and security markets; focuses on visitations to Wall Street firms and interaction with financial market professionals. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.

FINC 668 Applied Investment Analysis**Credits 3. 3 Lecture Hours.**

Theoretical and analytical developments in security selection and portfolio management; includes macroeconomic analysis, portfolio theory, and portfolio performance evaluation; concepts applied to the allocation of investments in a student-managed equity portfolio. Classification 6 students may not enroll in this course.

Prerequisites: FINC 632 and approval of instructor.

FINC 669 Titans of Investing**Credits 3. 3 Lecture Hours.**

Readings from the most influential theorists and practitioners of 20th and 21st century investing. Case studies and portfolio sector exercises in an institutional context, based on detailed assessment of global investment risks. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.

FINC 670 Real Property Analysis**Credits 3. 3 Lecture Hours.**

Provides the economic and financial tools used to analyze real estate investments, new property developments and the redevelopment of existing properties. Classification 6 students may not enroll in this course.

Prerequisite: Graduate classification.

FINC 671 Opportunities in Real Estate Finance**Credit 1. 1 Lecture Hour.**

Seminar in current issues and career opportunities in the real estate finance industry.

Prerequisite: Admission to Master of Real Estate.

FINC 672 Real Property Finance**Credits 3. 3 Lecture Hours.**

Primary and secondary mortgage markets; mortgage markets' institutional organization, alternative mortgage instruments, creative financing techniques, loan underwriting factors and risk hedging strategies. Classification 6 students may not enroll in this course.

Prerequisites: FINC 612 or FINC 635; FINC 670.

FINC 673 Real Property Valuation I**Credits 3. 3 Lecture Hours.**

Procedures used to estimate market value of real property; market analysis and valuation techniques most appropriate for appraising income-producing properties; demonstration appraisal report. Classification 6 students may not enroll in this course.

Prerequisites: FINC 612 or FINC 635; FINC 670; enrollment in MRE program.

FINC 674 Market Analysis for Development**Credits 3. 3 Lecture Hours.**

Techniques and data sources for market analysis for development; analysis for housing development; trade area analysis and market analysis for retail development; analysis for office, industrial parks and for specialized development. Classification 6 students may not enroll in this course.

Prerequisites: Enrollment in MRE program; FINC 670.

FINC 675 Analysis of Real Estate Investment Decisions**Credits 3. 3 Lecture Hours.**

Analytical techniques for real estate investment decision-making which emphasize the importance of income tax considerations, the magnitude of relevant cash flows and the timing of both; case histories used to analyze investment problems. Classification 6 students may not enroll in this course.

Prerequisite: FINC 612 or FINC 635.

FINC 676 Commercial Real Estate Law**Credits 3. 3 Lecture Hours.**

Commercial real estate law including legal ownership interests in oil and gas law, real estate sales contracts, financing, instruments and closings, commercial leases and real estate regulations and taxation. Classification 6 students may not enroll in this course.

Prerequisite: Graduate classification.**FINC 677 Real Estate Development Analysis****Credits 3. 3 Lecture Hours.**

Financial aspects of real estate development; project investment characteristics and merits. Classification 6 students may not enroll in this course.

Prerequisites: FINC 612 or FINC 635; enrollment in MRE program.**FINC 678 Real Estate Analytics****Credit 1. 1 Lecture Hour.**

Specialized training for the real estate finance industry including Excel, Argus and GIS software. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment in Master of Real Estate.**FINC 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

A directed internship in an organization to provide students with on-the-job training with professionals in organizational settings appropriate to the student's professional objectives. Classification 6 students may not enroll in this course.

Prerequisites: Approval of committee chair and department head.**FINC 685 Directed Studies****Credits 0 to 6. 0 to 6 Other Hours.**

Directed study of selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisites: Graduate classification and approval of instructor.**FINC 688 Doctoral Seminar****Credits 3. 3 Other Hours.**

Historical development of the conceptual framework of finance theory and practices; analysis of current research and controversial issues in the field. For doctoral students only. Classification 6 students may not enroll in this course. May be repeated for credit.

Prerequisite: Doctoral classification.**FINC 689 Special Topics in...****Credits 1 to 4. 1 to 8 Lecture Hours.**

Selected topics in an identified area of finance. May be repeated for credit. Classification 6 students may not enroll in this course.

FINC 690 Theory of Research in Finance**Credits 3. 3 Lecture Hours.**

Design of research in various subfields of finance and the evaluation of research results using examples from the current research literature. May be repeated for credit. Classification 6 students may not enroll in this course.

Prerequisite: Doctoral classification.**FINC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. Classification 6 students may not enroll in this course.

Prerequisite: Doctoral classification.**FINC 705 Corporate Financial Decisions****Credits 1 to 4. 1 to 4 Lecture Hours.**

Investment and financing decisions in corporations; principles, techniques and applications in corporation finance; time value of money; risk and return; capital budgeting; role of debt and equity; discounted cash flow valuation, capital structure and payout policy.

Prerequisite: For Master of Science in Business students only.**FINC 710 Entrepreneurial Finance****Credits 1 to 4. 1 to 4 Lecture Hours.**

Financing small and medium sized business from the perspective of the entrepreneur and investors; estimation of cash flow needs; sources of financing for new ventures, including angels and various types of private equity; models for structuring venture capital contracts.

Prerequisite: For Master of Science in Business students only.

FORS - Forensic Healthcare

FORS 601/NURS 601 Foundations of Forensic Healthcare**Credits 2. 2 Lecture Hours.**

Legal, ethical, clinical and advocacy responsibilities of responders and providers; forensic medical terminology; mechanisms of injury and death; identification of intentional and non-intentional wounds; scientific and medico-legal investigation of suspicious injury and death; introduction to written and photographic documentation of findings; judicial system overview.

Prerequisite: Graduate classification.**Cross Listing:** NURS 601/FORS 601.**FORS 602/NURS 602 Victimology: Clinical Implications and Applications****Credits 3. 3 Lecture Hours.**

Comprehensive examination of human responses to victimization resulting in physical and psychological trauma; interpersonal violence as a public health issue; overview of intentional injury, neglect, abuse and exploitation throughout the lifespan; process of seeking justice for victims; characteristics and motivational issues related to perpetrators of violence; transitioning patterns from role of victim to survivor including secondary effects of victimization; theoretical and evidence-based approaches to assessment; documentation of victims and perpetrators of violence.

Prerequisites: Graduate classification; grade of B or better in NURS 601/ FORS 601 or FORS 601/NURS 601, or approval of instructor.**Cross Listing:** NURS 602/FORS 602.**FORS 603/NURS 603 Impact of Violence Across the Lifespan****Credits 3. 3 Lecture Hours.**

In-depth analysis of the role of the multidisciplinary team within the criminal and civil court systems; critical collaboration between representatives of the health care system, investigative systems and the legal system in seeking justice for victims of violence; civil investigative processes involving trauma, injury and death; methods of evidence collection and preservation; public health perspective of interpersonal violence and prevention; social-ecological model of primary prevention; factors placing individuals at risk for violence; batterer/anti-bullying intervention programs.

Prerequisites: Grade of B or better in NURS 601/FORS 601 or FORS 601/ NURS 601, or approval of instructor.**Cross Listing:** NURS 603/FORS 603.

FORS 604/NURS 604 Forensic Investigation of Injury**Credits 2. 2 Lecture Hours. 1 Lab Hour.**

Injury pathology, across the lifespan; classifications and mechanisms of injury; intentional and unintentional injuries; physiology of wound healing; documentation of injury.

Prerequisites: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.

Cross Listing: NURS 604/FORS 604.

FORS 610/NURS 610 Forensic Sexual Assault Examiner**Credits 3. 3 Lecture Hours.**

Roles and responsibilities; legal definitions; expert witness testimony; nurse advocacy; motivations of perpetrators to offend; obtaining historical account of sexual assault using interview techniques; appropriate methods of documentation; EMTALA; head-to-toe assessment; injury documentation; anatomy of female and male sexual organs; evidence collection kit; treatment of STDs; pregnancy prophylactic treatment; role of advocates and advocacy centers; communication skills; vicarious victimization; civil and criminal trial procedures.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.

Cross Listing: NURS 610/FORS 610.

FORS 611/NURS 611 Application of Clinical Pharmacology to Victims of Violence**Credit 1. 1 Lecture Hour.**

Common substances of abuse; substance abuse and crimes against persons; drug laws and enforcement; drug facilitated crimes; pharmacological prophylaxis.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.

Cross Listing: NURS 611/FORS 611.

FORS 612/NURS 612 Human Trafficking**Credit 1. 1 Lecture Hour.**

Forms of trafficking; Trafficking Victims Protection Act; grooming of victims; perpetrator attributes; involuntary servitude, peonage, debt bondage; trafficking versus human smuggling; recruitment and transportation of victims; bio-psycho-social impact; human trafficking and the internet; identification and investigation of trafficked individuals; trafficking in the U.S. and world-wide.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.

Cross Listing: NURS 612/FORS 612.

FORS 613/NURS 613 Forensic Photography**Credit 1. 1 Lecture Hour.**

Fundamentals of photographic documentation of injuries sustained during a crime; camera and equipment selection; camera skills; forensic photography techniques; supporting documentation; data management; victim rights.

Prerequisite: Graduate classification.

Cross Listing: NURS 613/FORS 613.

FORS 614/NURS 614 Policy and Ethics of Interpersonal Violence**Credit 1. 1 Lecture Hour.**

Overview of policies and ethical considerations that inform forensic healthcare practice and procedures; identification, discussion and analysis of federal, state and local policies; regulation of professional practice; scopes and standards of practice; policy and legislation regarding victim populations; ethical standards for health professionals working with victims.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.

Cross Listing: NURS 614/FORS 614.

FORS 615/NURS 615 Forensic Mental Health**Credit 1. 1 Lecture Hour.**

Mental health issues related to victimization and perpetration; forensic mental health professional roles; diminished capacity and competence to stand trial; addiction and crime; current issues in forensic mental health.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.

Cross Listing: NURS 615/FORS 615.

FREN - French

FREN 601 French for Research**Credits 3. 3 Lecture Hours.**

Intensive course prepares students to read and translate scholarly materials and discipline-specific vocabulary. May not count for hours in a supporting field.

Prerequisite: Graduate classification.

FREN 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems in the field of French.

Prerequisite: Approval of instructor.

FREN 689 Special Topics in...**Credits 3. 3 Lecture Hours.**

Selected topics in an identified area of French. May be repeated for credit.

Prerequisite: Approval of instructor.

FREN 692 Readings**Credits 3. 3 Lecture Hours.**

Readings in French literary texts in the original language.

Prerequisite: Graduate classification.

GENE - Genetics

GENE 602 Introduction to Genetic Model Systems**Credits 2. 2 Lecture Hours.**

Introduction to the main eukaryotic genetic model systems (MS): yeast, *C. elegans*, *Arabidopsis*, *Drosophila*, zebrafish and mouse.

GENE 603 Genetics**Credits 4. 4 Lecture Hours.**

Development of fundamental concepts related to the structure, function, organization, transmission and distribution of genetic material.

Prerequisite: GENE 301.

GENE 606 Quantitative Phylogenetics**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Designed to provide the theory and tools required for inference of phylogenetic (evolutionary) relationships among biological taxa using various types of comparative data including morphological characters, biochemical and molecular characters, and DNA sequences; hands-on analysis of data using contemporary tools.

Prerequisite: Entomology 601 or approval of instructor.**Cross Listing:** ENTO 606 and WFSC 646.**GENE 608 Critical Analysis of Genetic Literature****Credits 2. 2 Lecture Hours.**

Introduction to Major Genetic Model Systems (MSs).

GENE 612 Population Genetics**Credits 3. 3 Lecture Hours.**

Biological approach to genetic characteristics of populations dealing with genetic equilibrium, allelic variation, determination of genetic variation in populations, effects of mating systems, selection, mutation and drift on population parameters.

Prerequisites: GENE 603; STAT 651.**GENE 613 Quantitative Genetics I****Credits 3. 3 Lecture Hours.**

Quantitative genetics concepts particularly dealing with partitioning of phenotypic variance into genetic and environmental components, selection response, effects of systems of mating, genetic covariance and threshold effects.

Prerequisites: STAT 651.**GENE 614/ANSC 614 Maximum Likelihood Estimation of Genetics****Credits 3. 3 Lecture Hours.**

Theoretical and analytical approaches to the application of maximum likelihood for the estimation of parameters under linear and nonlinear models; single and polygene genetic models including Hardy-Weinberg equilibrium, linkage analysis and quantitative trait loci detection.

Prerequisites: GENE 603; STAT 651; STAT 652 or STAT 601.**Cross Listing:** ANSC 614/GENE 614.**GENE 620/VIBS 620 Cytogenetics****Credits 3. 3 Lecture Hours.**

Examination and analysis of variation in chromosome structure, behavior and number; developmental and evolutionary effects of this variation.

Prerequisite: GENE 603.**Cross Listing:** VIBS 620/GENE 620.**GENE 626/ANSC 626 Analyses of Gene Expression****Credits 2. 1 Lecture Hour. 3 Lab Hours.**

Proficiency in handling DNA and RNA gained during exercises used routinely in analyses of gene expression; RNA preparation and analysis on Northern blots; in vitro transcription and polyacrylamide gel analysis of nucleic acids; sub-cloning and mRNA quantitation using polymerase chain reaction.

Prerequisites: GENE 450 or approval of instructor; radiation safety training.**Cross Listing:** ANSC 626/GENE 626.**GENE 629 Applied Animal Genomics****Credits 3. 3 Lecture Hours.**

Theory and application of genomics by livestock industries; consideration of genetic markers, gene mapping methods, genome analysis and emerging technologies such as microarrays, transgenesis, cloning and marker assisted selection; exposure to bioinformatic tools for genomics.

Prerequisite: GENE 603 or approval of instructor.**Cross Listing:** ANSC 629 and POSC 630.**GENE 631/BICH 631 Biochemical Genetics****Credits 3. 3 Lecture Hours.**

Genetic control of cellular metabolism. Mechanism of gene action; gene-enzyme relationships; regulation of gene expression; structure and organization of genomes; biochemical manipulation and characterization of genetic molecules.

Prerequisite: GENE 431/BICH 431 or BICH 431/GENE 431; BICH 603.**Cross Listing:** BICH 631/GENE 631.**GENE 633/WFSC 633 Conservation Genetics****Credits 3. 3 Lecture Hours.**

Genetic concepts and techniques relevant to management and conservation of biological diversity; research and conservation within a conservation genetics framework.

Prerequisites: Introductory courses in genetics and ecology or biological conservation.**Cross Listing:** WFSC 633/GENE 633.**GENE 638/ANSC 638 Predictions of Genetic Merit****Credits 3. 3 Lecture Hours.**

Mixed linear models and best linear unbiased prediction for genetic evaluation.

Prerequisite: GENE 613.**Cross Listing:** ANSC 638/GENE 638.**GENE 639/ANSC 639 Bacterial Genomics****Credits 3. 3 Lecture Hours.**

Analysis of bacteria on the whole genome level including effects on microbiology, ecology, epidemiology, diagnostics and bacterial pathogenesis; exploration of the variability of bacterial genomes within and across bacterial species; discovery of how these variations affect bacterial cell function, virulence and epidemiology.

Prerequisites: Graduate classification or approval of instructor.**Cross Listing:** ANSC 639/GENE 639.**GENE 643/SCSC 643 Molecular Quantitative Genetics and Plant Breeding****Credits 3. 3 Lecture Hours.**

Classical, applied and molecular aspects of quantitative genetics in plant breeding; genetic relationships; genetic diversity; genetic phenomena (linkage, heterosis and epistasis); genotype by environment interaction; mapping quantitative trait loci (QTL); genomic and marker-assisted selection; application of statistical software.

Prerequisites: STAT 651, SCSC 642 or GENE 613; or approval of instructor.**Cross Listing:** SCSC 643/GENE 643.**GENE 648/WFSC 648 Molecular Evolution****Credits 3. 2 Lecture Hours. 1 Lab Hour.**

Theory and tools used in the analysis of molecular evolutionary patterns of DNA and protein sequences; format combines lecture presentations by instructor, discussion of relevant scientific literature, computer exercises, preparation of research proposal or independent research project, and practice in peer review process.

Prerequisites: Basic courses in general Genetics and in Evolution.**Cross Listing:** WFSC 648/GENE 648.

GENE 654 Analysis of Complex Genomes**Credits 3. 3 Lecture Hours.**

History and current status of genetic and molecular analysis of higher eukaryotic genomes; coverage of techniques for dissection of genomes into manageable parts; investigations in genetics, breeding and evolution; emphasis on quantitative inheritance, genetic mapping, physical mapping, map-based cloning, with examples drawn from a wide range of organisms.

Prerequisite: GENE 603 or GENE 431/BICH 431.**Cross Listing:** SCSC 654 and MEPS 654.**GENE 655 Analysis of Complex Genomes—Lab****Credits 3. 7 Lab Hours.**

Analysis of Complex Genomes—Lab. Laboratory methods in molecular genetic techniques for genetic mapping, physical mapping, and map-based cloning of both qualitative and quantitative phenotypes.

Prerequisite: GENE 603 or equivalent or approval of instructor.**Cross Listing:** SCSC 655 and MEPS 655.**GENE 673/BICH 673 Gene Expression****Credit 1. 1 Lecture Hour.**

Oral presentations and discussions related to the biochemistry and molecular biology of gene expression in animal, plant, and microbial systems. Course may be repeated for credit up to 12 times.

Prerequisite: Graduate classification in biochemistry or genetics or approval of instructor.**Cross Listing:** BICH 673/GENE 673.**GENE 676 Speciation Genetics****Credits 3. 3 Lecture Hours.**

Introduction to the ability to speciate into biologically diverse forms via microevolutionary processes; literature on the origin of species beginning with Darwin and continuing through contemporary work; overview of several major topics in speciation with special emphasis on the genetics of speciation in this genomic era.

Prerequisites: GENE 603 and BIOL 610 or BIOL 466, or equivalent.**Cross Listing:** VIBS 676 and EEEL 676.**GENE 677/MCMD 677 Genes and Diseases****Credits 3. 3 Lecture Hours.**

Molecular and genetic basis for human disease; structure, function and evolution of chromosomes; epigenetics; gene mapping; complex genetic traits; cancer genetics; neurodegenerative disorders; animal models (yeast, mouse, worms, fruit flies); ethics.

Prerequisite: GENE 603, GENE 631/BICH 631, or MSCI 601 or approval of instructor.**Cross Listing:** MCMD 677/GENE 677.**GENE 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussions of topics of current importance in genetics; reports to be prepared and presented by graduate students enrolled in course.

GENE 682 Seminar Presentation**Credit 1. 1 Lecture Hour.**

Presentation of research progress and results; perform peer assessment.

GENE 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Individual problems or research not pertaining to thesis or dissertation.

Prerequisite: Approval of instructor.**GENE 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of genetics. May be repeated for credit.

Prerequisite: Approval of instructor.**GENE 691 Research****Credits 1 to 23. 1 to 23 Other Hours.****Prerequisite:** GENE 603.**GENE 697 Teaching Genetics Labs****Credit 1. 1 Lecture Hour.**

Theory and practical aspects of teaching genetics labs, with emphasis on content, grading, instructional methods and practical aspects of genetics labs. May be repeated for credit.

Prerequisites: Graduate classification in genetics; appointment as a TA for genetics labs.

GEOG - Geography

GEOG 603 Processes in Economic Geography**Credits 3. 3 Lecture Hours.**

Spatial organization and distribution of economic activity; patterns of land rent and land use; theories of economic development; models of spatial decision making.

Prerequisite: GEOG 304 or equivalent or approval of instructor.**GEOG 604 Processes in Physical Geography****Credits 3. 3 Lecture Hours.**

Methodologies and problems of physical geography with emphasis on the interrelationships of the physical environment; a foundation course for graduate work in geography.

Prerequisite: Approval of instructor.**GEOG 605 Processes in Cultural Geography****Credits 3. 3 Lecture Hours.**

Evolution of cultural landscapes; processes of innovation, diffusion and adaptation in context of developing human-environment relationships.

Prerequisite: Approval of instructor.**GEOG 610 Geographical Methods and Theory****Credits 3. 3 Lecture Hours.**

Development of geography as a discipline; methods and theories used in geography for understanding place and for spatial analysis of human and biophysical phenomena.

Prerequisite: Graduate classification in geography or approval of instructor.**GEOG 611 Geographical Research Design****Credits 3. 3 Lecture Hours.**

Methods, techniques and conceptual models for the conception, design, planning and conduct of geographical research.

Prerequisite: Graduate classification in geography or approval of instructor.**GEOG 612 Applied Climatology****Credits 3. 3 Lecture Hours.**

Climate data and methods to solve a wide range of environmental problems; collection, processing, analysis and interpretation of surface observations, radar, satellite, reanalysis and climate model data; statistical methods and physical modeling; practical problems and development of tools for decision makers.

Prerequisite: Graduate classification.

GEOG 616 Urban Geography**Credits 3. 3 Lecture Hours.**

Spatial patterns and processes of urban systems; growth and sprawl; environmental impacts; residential choice models; political fragmentation; economic development; power and privilege; place-based identity.

Prerequisite: GEOG 306 or equivalent.**GEOG 619 Human Impact on the Environment****Credits 3. 3 Lecture Hours.**

Human alterations of landscapes, the atmosphere and the waters of the earth; interference with natural chemical cycles; disturbance of ecological equilibria; depletion of natural resources; roles of technology and population growth.

Prerequisite: Approval of instructor.**GEOG 621 Land-Use and Land-Cover Change****Credits 3. 3 Lecture Hours.**

Human dimensions of land-use and land-cover change; theories of global and regional land-use and land-cover changes that emphasize processes, institutions, and patterns at multiple scales; methodologies and research agendas including geo-spatial analysis, modeling, and social science approaches.

Prerequisites: GEOG 619 or approval of instructor; Graduate classification.**GEOG 624 Biogeography: Theory and Methods****Credits 3. 3 Lecture Hours.**

Theory and methods utilized in contemporary biogeography; emphasis on the analysis of vegetation communities and their environmental controls; various methods of ordination and predictive methods for analyzing vegetation ranges; spatial analysis of vegetation.

Prerequisite: Approval of instructor.**GEOG 625/ENTO 625 Landscape Ecology****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Study of structure, function, and change in a heterogeneous land area composed of interacting ecosystems; examine basic ecological principles dealing with landscape structure.

Prerequisite: Approval of instructor.**Cross Listing:** ENTO 625/GEOG 625.**GEOG 626 Fluvial Geomorphology****Credits 3. 3 Lecture Hours.**

Concepts and methods applicable to the fluvial systems; components affecting rivers and drainage basin and analysis geomorphology; analytical treatment of problems arising from fluvial changes.

Prerequisite: GEOG 203 or approval of instructor.**GEOG 627 Arid Lands****Credits 3. 3 Lecture Hours.**

Processes and landforms in dryland environments; nature and dynamics of gravity, water and wind in deserts; Quaternary climates and arid lands; human impact in drylands.

Prerequisite: GEOG 604 or approval of instructor.**GEOG 629 Cultural and Political Ecology****Credits 3. 3 Lecture Hours.**

History of ideas about humans and environment; political and social meanings of nature and culture; access and control of resources; theories of environmental change; geographic approaches to political ecology research; current debates and future directions.

GEOG 634/WMHS 601 Hydrology and Environment**Credits 3. 3 Lecture Hours.**

Examination of hydrologic processes affecting surface and groundwater resources; impact of climate, soils, vegetation, land-use practices, and human effects on hydrologic processes; natural-scientific perspectives emphasized.

Prerequisite: Graduate classification.**Cross Listing:** WMHS 601/GEOG 634.**GEOG 635 Advanced Biogeography****Credits 3. 3 Lecture Hours.**

Theory and contemporary research in biogeography; methods used in conducting biogeographical research; spatial and temporal changes in the distribution of organisms; influences of humans and the physical environment on biogeographic patterns.

Prerequisite: GEOG 624 or approval of instructor.**GEOG 642/GEOS 642 Past Climates****Credits 3. 3 Lecture Hours.**

Terrestrial and marine proxy records of past climate variability, including tree rings, coral, and sediments; past climate change events such as the Little Ice Age and Medieval Warm Period; greenhouse gases and global temperature; insight into the nature of climate change and challenges humankind faces in the next few centuries.

Prerequisite: Graduate classification.**Cross Listing:** GEOS 642/GEOG 642.**GEOG 644 Geographic Education: Theory and Practice****Credits 3. 3 Lecture Hours.**

Geography as an element of the educational system including K-12, undergraduate, graduate; geography's role in curricula and its practice in classrooms; course design and integration of geographic concepts into classroom instruction.

Prerequisite: Graduate classification.**GEOG 645 Research in Geographic Education****Credits 3. 3 Lecture Hours.**

Research in geographic education and the interface between research in geography and geographic education; identification of research questions; choice of methodology; review of literature; data collection and analysis; communication of results.

Prerequisite: Graduate classification.**GEOG 648 Political Geography of the World-System.****Credits 3. 3 Lecture Hours.**

Political and geopolitical evolution of the modern world-system; major geopolitical theories, settler colonization, extractive colonization, imperialism, decolonization, development of European state-system hegemonic change and theory of world leadership cycles.

Prerequisite: Graduate classification.**GEOG 651 Remote Sensing for Geographical Analysis****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Provides and introduction to remote sensing fundamentals. Discussion of past, present and planned earth observing sensors as well as technical issues involved in the collection, processing and interpretation of remote sensing images with emphasis on application to geographic problems, including geomorphology, hydrology and coastal oceanography.

Prerequisite: Graduate classification.**GEOG 652 Quantitative Methods in Geography****Credits 3. 3 Lecture Hours.**

Designed to acquaint with quantitative methods commonly used in geographical research to describe, characterize, model and analyze geo-spatial data.

Prerequisite: Approval of instructor.

GEOG 659 Geodatabases**Credits 3. 3 Lecture Hours. 1 Lab Hour.**

GIS data modeling; introductory and advanced spatial SQL (structured query language); spatial database management system (DBMS) server setup, management and maintenance; spatial DBMS design, implementation, tuning, performance analysis and indexing; connecting spatial data services and warehouses to GIS software.

GEOG 660 Applications in GIS**Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Basic concepts of design, planning, and implementation of geographic information systems.

Prerequisite: Graduate classification.**GEOG 661 Digital Image Processing and Analysis****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Principles of georectifying, processing, manipulating and interpreting data collected by nonphotographic sensors concentrating on solid earth resources.

Prerequisite: GEOG 651 or equivalent or approval of instructor.**GEOG 662 GIS in Land and Property Management****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Introduction to concepts of design, planning and implementation of geographic information systems (GISs) for land and property management applications; rural land and agricultural property; urban and residential land uses; cadastral surveying.

Prerequisite: GEOG 660 or equivalent or approval of instructor.**GEOG 663 GIS in Petroleum****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Investigation of the use of Geographic Information Systems within the Petroleum Industry; case studies present geospatial workflows used in various industry sectors; laboratory exercises provide practical applications incorporating industry-standard data sources.

Prerequisite: GEOG 660 or equivalent, or approval of instructor.**GEOG 665 GIS-Based Spatial Analysis and Modeling****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Investigates methodology of integrating various spatial analysis and modeling techniques with GIS for environmental/socio-economic applications; practical applications; theoretical/technical aspects of related issues in detail.

Prerequisite: GEOG 660 or equivalent or approval of instructor; also taught at Galveston campus.**GEOG 666 Coastal Geomorphology****Credits 3. 3 Lecture Hours.**

Essential concepts and methods to coastal geomorphology; review history and processes of coastal geomorphology; analytical treatment of problems associated with coastal environmental changes.

Prerequisite: GEOG 203 or equivalent.**GEOG 667 Dynamic Modeling of Earth and Environmental Systems****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Dynamical systems modeling; dynamic complexity; key concepts, processes and human impact on earth and environmental systems; model building and testing; system behavior over time; model validation and sensitivity; examples from the applications in earth and environmental sciences.

Prerequisite: Approval of instructor.**GEOG 668 Arctic Climates****Credits 3. 3 Lecture Hours.**

Arctic climate system, physical characteristics and climatic features, the atmospheric energy budget, the atmospheric circulation, the surface energy budget, the hydrologic cycle, and the interactions between the atmosphere, Arctic Ocean, and the sea ice cover.

Prerequisite: Graduate classification.**GEOG 676 GIS Programming****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Automation of GIS software; integration of custom code as extensions into GIS software; programmatic manipulation of GIS data.

Prerequisite: Graduate classification.**GEOG 677 Geomorphometry****Credits 3. 3 Lecture Hours.**

Introduction to discipline of geomorphometry; science of quantitative land-surface characterization; fundamental principles of terrain analysis; theory and concepts of land-surface and dynamics; software and digital terrain modeling; production of land-surface parameters and objects and terrain mapping applications.

Prerequisites: Equivalent of GEOG 361 and GEOG 390, or approval of instructor; graduate classification.**GEOG 678 WebGIS****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Internet architectures; setup, management and maintenance of web-based Geographic Information System (WebGIS) servers, data and services; use of WebGIS data and services in the creation of custom web-based maps; analysis of WebGIS system architecture, design and implementation.

Prerequisite: Graduate classification.**GEOG 680 Geomorphometry****Credits 3. 3 Lecture Hours.**

Introduction to the discipline of geomorphometry representing the science of quantitative land-surface characterization; focus on the fundamental principles of terrain analysis; theory and concepts of land-surface and dynamics; software and digital terrain modeling; production of land-surface parameters and objects and terrain mapping applications.

Prerequisites: GEOG 361 or equivalent, GEOG 390 or approval of the instructor; graduate classification.**GEOG 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussions of current research and selected topics.

Prerequisite: Approval of department head.**GEOG 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

For students with major or minor in geography to undertake investigations in special aspects of geography.

Prerequisite: Approval of instructor.**GEOG 687/ANTH 624 Geoarchaeology****Credits 3. 3 Lecture Hours.**

Application of geological concepts and methods to archaeological research; history of geoarchaeology; site formation processes; modification of archaeological sites and sediments; landscape reconstruction and change and their effects on human behavior.

Prerequisite: ANTH 602 or equivalent.**Cross Listing:** ANTH 624/GEOG 687.

GEOG 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of geography. May be repeated for credit.

Prerequisite: Approval of instructor.**GEOG 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Original research in various areas of geography. Research for thesis or dissertation.

GEOG 695 Frontiers in Geographic Information Science**Credits 3. 3 Lecture Hours.**

Theoretical foundations and the latest development of geographic information science (GIScience); topics related to representations of space and time, geocomputation, spatially integrated social sciences, and social informatics.

Prerequisite: Introductory GIS.**GEOG 696 Geomorphology and Remote Sensing****Credits 3. 3 Lecture Hours.**

Application of remote sensing to study landforms, imagery, includes, aerial photography; LANDSAT; SPOT, TM and shuttle photography.

Prerequisite: GEOG 203 or approval of instructor.

GEOL - Geology

GEOL 609 Field Geology**Credits 1 to 6. 1 to 6 Other Hours.**

Individual instruction in advanced and specialized field methods, geologic interpretation and field evaluation procedures. Choice of topics and locations of field studies will vary depending upon individual and specific needs.

Prerequisite: GEOL 300 or approval of instructor.**GEOL 610 Field Methods in Hydrogeology****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Field methods in hydrogeology; including ground water drilling technology and law; investigation and planning of well sites; installation of ground water wells; field testing of aquifer properties and analysis of field data. Field trips may be required for which departmental fees may be assessed to cover costs.

Prerequisite: GEOL 410 or approval of instructor.**GEOL 612 Structural Geology****Credits 3. 3 Lecture Hours.**

Mechanical principles important to structural geology and experimental results relating to rock deformation followed by applications to natural deformation; mechanisms, rather than geometries. Primarily for students not concentrating in structural geology but who desire an advanced general course.

Prerequisite: Approval of instructor.**GEOL 614 Advanced Hydrogeology****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Geologic conditions determining the distribution and movement of ground water and their effect on the hydrologic properties of aquifers.

Prerequisites: MATH 151 and MATH 152, or equivalent.**GEOL 616 Petroleum Systems Analysis and Basin Modeling****Credits 3. 3 Lecture Hours.**

Geological processes in sedimentary basins; petroleum system elements and modeling; hydrocarbon generation, expulsion, migration, accumulation; fluid analysis; multi-disciplinary data integration; basin modeling software and simulation.

GEOL 617 Introduction to the Petroleum Industry**Credits 3. 3 Lecture Hours.**

Introduction to the petroleum industry and geoscience issues associated with the full petroleum cycle from resource discovery to marketing of refined petroleum products; focuses on the role of geoscientists in all facets of the business.

Prerequisite: Graduate classification or approval of instructor.**GEOL 619 Petroleum Geology****Credits 3. 3 Lecture Hours.**

Properties of reservoir rocks; origin, migration and accumulation of petroleum; geologic interpretation of borehole logs and fluid-pressure measurements and the role of hydrostatic and hydrodynamic pressures in oil accumulation.

Prerequisite: Approval of instructor.**GEOL 621 Contaminant Hydrogeology****Credits 3. 3 Lecture Hours.**

Physical concepts of mass transport; dispersion; diffusion; advection; geochemical processes including surface reaction; hydrolysis; biodegradation; aspects of modeling; process and parameter; and remediation.

Prerequisite: GEOL 410 or approval of instructor.**GEOL 622 Stratigraphy****Credits 3. 3 Lecture Hours.**

Principles for correlating and naming stratigraphic units; controls on stratigraphic development (sediment supply, base-level change, subsidence, climate, and compaction); principles and application of sequence stratigraphy; subsurface stratigraphy; facies analysis and stratigraphic architecture.

Prerequisite: Graduate classification or approval of instructor.**GEOL 623 Carbonate Rocks****Credits 3. 3 Lecture Hours.**

Principles of carbonate sedimentology; carbonate depositional sequences defined in modern environments and utilized to interpret the rock record; introduction to depositional and diagenetic microfacies; shelves, ramps and isolated platforms and their tectonosedimentary significance; suggested for geoscience majors.

Prerequisites: A basic understanding of sedimentology and the associated terminology; graduate classification.**GEOL 624 Carbonate Reservoirs****Credits 3. 3 Lecture Hours.**

Recognition and description of hydrocarbon reservoirs in carbonate rocks; classification of carbonate porosity; capillary pressure curves and pore types; pore characteristics as proxies for permeability in reservoir modeling; techniques for mapping flow units.

Prerequisites: Graduate classification and approval of instructor.**GEOL 625 Applied Ground Water Modeling****Credits 3. 3 Lecture Hours.**

Concept of groundwater flow and contaminant transport; numerical simulations of solving flow and transport equations; finite difference and finite element methods; software structures of groundwater flow, contaminant transport, density-dependent fluid flow and hydrocarbon remediations; real case applications of software including geological, physical, chemical, biological and hydrological information.

Prerequisite: GEOL 410 or approval of instructor.

GEOL 629 Regional Geology of North America**Credits 3. 3 Lecture Hours.**

Regional geology of North America, examining the accumulation and deformation of the rock units involved; structural form and style emphasized; entire geologic history investigated.

Prerequisite: Graduate classification or approval of instructor.

GEOL 631 Engineering Geomorphology**Credits 3. 3 Lecture Hours.**

Active surface processes as they influence engineering construction; erosion, rivers and floods, slope processes, subsidence, coastal processes, ice, weathering and ground water.

Prerequisites: Graduate classification in engineering or geosciences; GEOG 331 or approval of instructor.

GEOL 633 River Restoration**Credits 3. 3 Lecture Hours.**

Geologic, geomorphic and geomechanical principles applied to the investigation, design, construction, and maintenance of river restoration projects.

Prerequisite: GEOL 631 or GEOG 626 or approval of instructor.

GEOL 635 Engineering Geology**Credits 3. 3 Lecture Hours.**

Geological principles applied to the investigation design, construction and maintenance of engineering projects; history, development and role of engineering geologic practice as applied to dams, waste disposal, surface and ground water, tunneling, quarrying and construction materials.

GEOL 640/WMHS 640 Geochemistry of Natural Fresh Waters**Credits 3. 3 Lecture Hours.**

Chemistry of aqueous solutions; weathering/redox reactions and controls on fresh waters; natural and anthropogenic factors affecting major, minor, and trace elements in fresh waters; evaluation of fresh water composition; application of water-quality measurements to quantitative hydrology.

Cross Listing: WMHS 640/GEOL 640.

GEOL 641 Environmental Geochemistry**Credits 3. 3 Lecture Hours.**

Geochemical processes affecting the fate and transport of inorganic and organic pollutants in terrestrial systems; equilibrium and kinetic modeling.

Prerequisite: GEOL 451 or approval of instructor.

GEOL 643 Introduction to Electron Microprobe Analysis**Credits 2. 1 Lecture Hour. 3 Lab Hours.**

Digital imaging and qualitative and quantitative chemical analysis of geological and material science samples using the electron microprobe; emphasis on quantitative chemical analysis using WDS (wavelength-dispersive spectrometry) methods; use the electron microprobe and correctly interpret analytical results.

Prerequisite: Approval of instructor.

GEOL 645 Geochronology**Credits 3. 3 Lecture Hours.**

Earth's 4.5 billion-year history is divided into units of geologic time based on the observed changes in the rock record: the timing of those changes is quantified by numerical dating methods: this course examines both dating methods and physical and biological changes observed in the rock record.

Prerequisite: Graduate classification or approval of instructor.

GEOL 647 Radiogenic Isotope Geology**Credits 3. 3 Lecture Hours.**

Use of radiogenic isotopes in addressing problems in high- and low-temperature geochemistry; their use as tracers for past and present-day processes at the surface and interior of the Earth.

Prerequisite: Approval of instructor.

GEOL 648 Stable Isotope Geology**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Stable isotopes of oxygen, carbon, sulfur and hydrogen applied to problems in paleontology and paleoecology, carbonate diagenesis, petroleum exploration, and igneous and metamorphic petrology; isotopic paleotemperatures; analytical methods; theory of isotopic fractionation.

Prerequisite: GEOL 451 or approval of instructor.

GEOL 650 Paleoecology**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Interrelationships of organisms and environment in the fossil record; methods and criteria available for interpreting ancient environments; critical review of classical studies and current research in paleoecology.

Prerequisite: Approval of instructor.

GEOL 651 Paleoeological Community Analysis**Credits 3. 3 Lecture Hours.**

Quantitative analysis of multivariate paleoecological community data; measurement of diversity; cluster analysis; gradient analysis by standard and canonical ordination techniques.

Prerequisite: A basic course in statistics or approval of instructor.

GEOL 652 Biogeology**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Major trends and processes in the evolution of life through geologic time. Interrelationships of biological and physical processes in earth history; application of paleontology to current problems in geology; critical review of modern developments in biogeology.

Prerequisite: GEOL 305 or approval of instructor.

GEOL 653 Geobiological Research**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Team-based research in modern or historical geobiology; definition of questions and hypothesis testing; analytical techniques; project lifecycle; reporting of results. May be taken two times for credit.

Prerequisite: Approval of instructor.

GEOL 654 Evolutionary Patterns and Theory**Credits 3. 3 Lecture Hours.**

Evolutionary patterns in the fossil record and application of evolutionary theory to understanding these patterns; comparisons of neo-Darwinian and punctuational hypotheses; events and processes pertaining to microevolutionary and macroevolutionary change; and methods of determine phylogenies of organisms.

Prerequisite: Graduate classification in geological or biological sciences.

GEOL 658 Earth Systems Through Deep Time: Global Change, Paleoclimate and Life**Credits 3. 3 Lecture Hours.**

History and cause of global change in the earth system, Archean to Holocene; Impact of biotic change on the earth system; influence of tectonics on paleochemistry and climate change; influence of climate on tectonics; methods and models for evaluating global change.

Prerequisite: Graduate classification.

GEOL 663 Fracture and Faulting of Rocks**Credits 3. 3 Lecture Hours.**

The structure of fractures and faults in the Earth's crust at the macroscopic and microscopic scale; formation and evolution of faults, faults networks and fault zones; fault-related rocks and faulting mechanisms; influence of faults on fluid flow properties; seismic faulting and creep; current problems and research opportunities.

Prerequisite: Graduate classification.**GEOL 664 Mechanical Analysis in Geology****Credits 3. 3 Lecture Hours.**

Mechanical analysis of geological problems based on concepts of stress, strain, strength, elasticity, viscosity and plasticity; folding, faulting, dike formation, hydraulic fracturing, magma and glacial flow, and cooling of magmatic bodies.

Prerequisites: MATH 253; approval of instructor.**GEOL 665 Structural Petrology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Mechanisms of rock deformation from single crystal to mountain range; techniques for mapping stresses and strains and for inferring physical conditions and mechanical behavior at time of deformation; laboratory assignments on descriptive techniques include petrographic microscope-universal stage methods, field procedures and data analysis.

Prerequisite: Approval of instructor.**GEOL 668 Clastic Sedimentology and Sedimentary Petrology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Detailed analyses of clastic sedimentary rocks: relationships of facies and depositional environments with emphasis on continental, coastal and shallow shelf clastic sediments; petrography and diagenesis of modern and ancient clastic sediments.

Prerequisites: Optical mineralogy course and sedimentology (undergraduate); graduate classification.**GEOL 678 Earth Science Modeling****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Techniques for building, solving and analyzing numerical models applied to a wide variety of problems in geology, geochemistry, geobiology and geophysics; derivation and scaling of conservation laws; finite difference and finite element techniques and error analysis; programming in MATLAB or a high-level language.

GEOL 681 Seminar**Credit 1. 1 Lecture Hour.**

Reports and discussions of current research and selected topics from geologic literature.

Prerequisite: Graduate classification.**GEOL 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Enables graduate students to undertake limited investigations not within their thesis or dissertation research and not covered in established curricula.

Prerequisites: Graduate classification and approval of instructor.**GEOL 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 7 Lab Hours.**

Selected topics in an identified area of geology. May be repeated for credit.

Prerequisite: Approval of instructor.**GEOL 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Original research on problems in various phases of geology. Research for thesis or dissertation.

GEOP - Geophysics

GEOP 611 Geomechanics**Credits 3. 3 Lecture Hours.**

Development of continuum mechanics and its application to rock deformation; stress, strain, stress equilibrium, constitutive relations; governing equations for elastic solids and viscous fluids formulated and used to solve elementary boundary-value problems which have application to structural geology and solid-state geophysics.

Prerequisite: MATH 221 or equivalent.**GEOP 615 Experimental Rock Deformation****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Results of laboratory testing of mechanical properties of rocks at high pressure and temperature; interaction of theoretical, experimental, petrofabric and field studies of rock deformations as applied to problems in structural geology, seismology and engineering; philosophy of experimentation, apparatus design, data interpretation and extrapolation.

Prerequisite: GEOP 611 or GEOL 665 or approval of instructor.**GEOP 618 Numerical Methods for the Geosciences****Credits 3. 3 Lecture Hours.**

Mathematical theory and numerical techniques for modeling physical systems and processes in the Geosciences; discretization of continuum equations for solids and fluids; finite difference methods, convergence, consistency, and stability; finite element and spectral methods in fluid dynamics and seismology; iterative solvers; implicit and explicit methods for diffusion and advection.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** ATMO 618 and OCNG 618.**GEOP 619 Finite Element Methods in Geophysics****Credits 3. 3 Lecture Hours.**

Fundamental concepts of finite element methods, formulation of two and three-dimensional boundary-value problems in geophysics, including heat conduction, elasticity, seismic wave propagation and gravity and magnetic modeling; emphasis on the Galerkin method and isoparametric concept; data processing and programming techniques such as MPI-based parallel computing.

GEOP 620 Geophysical Inverse Theory**Credits 3. 3 Lecture Hours.**

Inferences about Earth structure from geophysical data; explicit treatment of sparse and noisy observations; construction of smooth Earth models; linear inversion of marine magnetic anomalies from seafloor magnetization; smooth inversion of DC sounding data from electrical structure; seismic tomography and geodetic fault-plane reconstructions; advanced methods for nonlinear deterministic inversion.

Prerequisite: Graduate classification.**GEOP 622 Petroleum Seismology II****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Sampling (wavefield sampling); F-K analysis (applications to dip filtering and migration); deconvolution (deterministic and predicative); velocity estimation and tomography (travel time inversion); imaging in time and depth (migration); Zoeppritz equations and AVO analysis.

Prerequisite: GEOP 421 or approval of instructor.

GEOP 628 Basin Architecture**Credits 3. 3 Lecture Hours.**

Tectonic classification of basins; tectonic mechanisms responsible for basin formation: mechanical behavior of the lithosphere; subsidence; geophysical signatures of sedimentary basins; tectonic controls on sedimentation and basin filling; petroleum systems and basin-scale hydrologic systems.

Prerequisite: Approval of instructor.**GEOP 629 Seismic Interpretation****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Introduces the problem of converting seismic properties of reflection time, velocity, impedance, amplitude and phase to geologic parameters of lithology, structures and stratigraphy using both models and real data.

Prerequisite: Approval of instructor.**GEOP 631 Seismic Data Processing****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Methods used to image the Earth using seismic reflection data, including deconvolution, f-k filtering, velocity analysis and migration; processing software; emphasis on field data.

Prerequisite: Graduate classification or approval of instructor.**GEOP 635 Methods of Geophysical Exploration****Credits 3. 3 Lecture Hours.**

Introduction to theory of gravity, magnetic, electrical and seismic exploration methods; physical properties of earth materials and their influence on geophysical measurements; limitations of geophysical data in the interpretation of subsurface structure.

Prerequisite: Graduate classification.**GEOP 651 Theoretical Seismology****Credits 3. 3 Lecture Hours.**

Wave propagation in unbounded and bounded elastic media; seismic reciprocity and the elastodynamic representation theorem; radiation patterns from earthquake sources; body waves, Rayleigh waves, Stoneley waves, Love waves and Lamb waves; characteristic equation for surface waves in a layered half-space; dispersion and phase and group velocities; methods of stationary phase and steepest descents; Cagnaird-deHoop technique; ray theory in an inhomogeneous earth; inversion of travel times; viscoelastic wave propagation; normal modes of vibration of the earth.

Prerequisite: GEOP 652 or approval of the instructor. (Offered in alternate years.)**GEOP 652 Earthquake Seismology****Credits 3. 3 Lecture Hours.**

Seismometry and earthquake precursors; mathematical theory of elasticity and its application to earthquake studies; dissipation of elastic energy; seismic sources; earthquake risk; free modes of the earth; discrimination between underground nuclear explosions and earthquakes.

Prerequisite: GEOP 421 or approval of instructor.**GEOP 655 Borehole Acoustic****Credits 3. 3 Lecture Hours.**

Introduces propagation of acoustic waves in boreholes, with applications to petroleum exploration and comparisons to other waveguide phenomena in the earth sciences; survey of full waveform acoustic logging and influence of borehole modes for crosswell and vertical seismic profile experiments; exercised in data analysis with industry software.

Prerequisite: GEOP 421 or GEOP 652 or approval of instructor.**GEOP 660 Physics of the Earth's Interior****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Physics of the Earth's Interior. Structure, composition and physical state of the Earth's interior; constraints on models of the Earth imposed by seismic, gravity, heat flow, and electrical conductivity; thermodynamics and high pressure mineral physics; Earth's motion and deformation; rheology.

Prerequisite: Graduate classification.**GEOP 661 Reservoir Rock Physics****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Poroelasticity and electrodynamics of porous media; Biot Theory, Gassman fluid substitution and advanced rock physics models; relationships between seismic/electromagnetic properties and multiphase reservoir properties such as porosity, saturation, permeability, wettability, connectivity and other pore-structure parameters; computer-based rock physics modeling; application to reservoir characterization; time-lapse reservoir monitoring.

Prerequisite: Approval of instructor. (Spring, alternate years.)**GEOP 662 Advanced Reservoir Rock Physics****Credits 3. 3 Lecture Hours.**

Continuation of GEOP 661; topological characterization of fractured porous media and Riemannian manifold, balance laws of an effective medium, balance laws of interacting fields, compatibility equations and structural evolution, equations of relative motion, thermodynamics and constitutive relations, wave phenomena and fluid flow in fractured porous media.

Prerequisites: GEOP 661 and approval of instructor.**GEOP 666 Principles of Geodynamics****Credits 4. 4 Lecture Hours.**

Geological and geophysical methods and phenomena pertinent to geodynamics; plate tectonics; seismicity and seismology; magnetism; gravity; heat flow; igneous, metamorphic and sedimentary petrology; paleontology; and rock mechanics.

Prerequisite: Approval of instructor.**GEOP 681 Seminar****Credit 1. 1 Lecture Hour.**

Discussion of subjects of current importance.

Prerequisite: Graduate classification.**GEOP 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

For graduate students to undertake limited investigations not within their thesis or dissertation research and not covered in established curricula.

Prerequisites: Graduate classification and approval of department head.**GEOP 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of geophysics. May be repeated for credit.

Prerequisites: Graduate classification and approval of instructor.**GEOP 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research toward thesis or dissertation.

GEOS - Geosciences

GEOS 601 Polar Regions of the Earth: Science, Society, and Discovery **Credits 3. 3 Lecture Hours.**

Disciplines and topics that define modern polar science in the north and south; includes history of the Polar Regions, polar geosciences, major polar scientific projects, and special topics; participate as individuals and teams in education, outreach and science projects.

Prerequisite: Graduate classification.

GEOS 642/GEOG 642 Past Climates

Credits 3. 3 Lecture Hours.

Terrestrial and marine proxy records of past climate variability, including tree rings, coral, and sediments; past climate change events such as the Little Ice Age and Medieval Warm Period; greenhouse gases and global temperature; insight into the nature of climate change and challenges humankind faces in the next few centuries.

Prerequisite: Graduate Classification.

Cross Listing: GEOG 642/GEOS 642.

GEOS 676 Capstone Experience

Credits 6. 6 Lecture Hours.

Integration of knowledge and skills gained through other courses and experiences in the Master of Geoscience program, application of conceptual geoscience knowledge to solve applied problems in the discipline; development of teamwork, communication and professional skills through interactions with industry professionals.

Prerequisites: Enrollment in Master of Geoscience.

GEOS 677 Science, Technology, Engineering and Mathematics (STEM) Teaching Professional Development

Credit 1. 1 Lecture Hour.

Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research. Must be taken on satisfactory/unsatisfactory basis.

Prerequisites: Graduate classification and approval of instructor.

Cross Listing: ENGR 677 and SCEN 677.

GEOS 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours.

Selected topics in an identified area of geosciences. May be repeated for credit.

Prerequisites: Graduate classification and approval of instructor.

GERM - German

GERM 603 German for Research

Credits 3. 3 Lecture Hours.

Intensive course prepares students to read and translate scholarly materials and discipline-specific vocabulary. May not count for hours in a supporting field.

Prerequisite: Graduate classification.

GERM 685 Directed Studies

Credits 1 to 4. 1 to 4 Other Hours.

Directed individual study of selected problems in the field of German.

Prerequisite: Approval of department head.

GERM 692 Readings

Credits 3. 3 Lecture Hours.

Readings in German literary texts in the original language.

Prerequisite: Graduate classification.

HCPI - Healthcare Prof Core In

HCPI 557 Contemporary Healthcare Issues

Credits 3. 3 Lecture Hours.

This course explores contemporary healthcare issues that affect the medical and dental needs of special care patients. The healthcare issues are examined within historic, economic, and philosophical contexts and students will analyze those that affect individuals with special healthcare needs.

HCPI 651/NURS 651 Healthcare Quality Improvement and Informatics

Credits 3. 3 Lecture Hours.

Overview of health care from the viewpoint of quality improvement and health care informatics; uses the science of quality measurement and improvement in conjunction with information science to propose a quality improvement initiative; legal and ethical implications of current trends in information technology and safety.

Prerequisite: Graduate classification.

Cross Listing: NURS 651/HCPI 651.

HCPI 652/NURS 652 Scholarship: Integration and Application

Credits 3. 3 Lecture Hours.

Integrates theory, evidence, clinical judgment, research and interprofessional perspectives using translational processes to improve patient outcomes; application of available evidence to interdisciplinary clinical practice; identification of gaps in knowledge; development of a spirit of inquiry and lifelong scholarship.

Prerequisite: Graduate classification.

Cross Listing: NURS 652/HCPI 652.

HCPI 655 Leadership and Health Policy I

Credits 3. 3 Lecture Hours.

Emphasis on leadership skills while focusing on ethical decision making and effective working relationships within an organization; preparation for the health profession leader to intervene at the system level through the policy development process; advocacy strategies to influence health and health care.

Prerequisite: Graduate classification.

HCPI 656/NURS 656 Leadership and Health Policy II

Credits 3. 3 Lecture Hours.

Development of skills essential to leadership and policy processes, including communication, collaboration, negotiation, delegation and coordination by applying systems theory and complexity science will be promoted; preparation to assume a leadership role in the management and evaluation of human, fiscal and physical health resources; develop skills in political efficacy and the ability to improve the systems and population outcomes through the development of health policy.

Prerequisite: Graduate classification.

Cross Listing: NURS 656/HCPI 656.

HCPI 658 Survey Research

Credits 3. 3 Lecture Hours.

Development of knowledge and skills necessary to plan, conduct and evaluate survey research as well as write a survey research proposal.

HISP - Hispanic Studies

HISP 600 Introduction to Hispanic Studies

Credits 3. 3 Lecture Hours.

Interdisciplinary review of linguistic, literary, theoretical, cultural, historical and socio-economic issues of the Hispanic world; study of the mechanics and ethics of scholarly procedure and bibliographical guidance on original research; Spanish-language writing practicum.

Prerequisite: Graduate classification.

HISP 602 Spanish Applied Linguistics

Credits 3. 3 Lecture Hours.

Current linguistic research that investigates real-world issues related to Spanish language use and the acquisition of Spanish as a second language.

Prerequisite: Graduate classification.

HISP 603 Development of the Spanish Language

Credits 3. 3 Lecture Hours.

The origin and development of the Spanish language from pre-Roman to modern period with emphasis on the socio-historical contexts; analysis of literary and documentary evidence of linguistic evolution.

Prerequisite: HISP 602 or approval of instructor.

HISP 605 Spanish for Reading and Translation

Credits 3. 3 Lecture Hours.

Lexical and grammatical study and practice for the acquisition of research-practical reading and translation competence in Spanish; for graduate students needing foreign language reading competence; taught in English.

Prerequisite: Graduate classification.

HISP 606 Spanish in the United States

Credits 3. 3 Lecture Hours.

In-depth description and analysis of Spanish varieties spoken in the United States, by both traditional and new immigrant populations, including New Mexico and Louisiana Spanish, Mexican, Cuban, Puerto Rican, Dominican, Central and South American dialects; topics include accommodation, koinéization, borrowing, code-switching, attitudes and policies related to language maintenance and shift.

Prerequisite: Graduate classification.

HISP 607 Seminar in Spanish Linguistics

Credits 3. 3 Lecture Hours.

Intensive investigation of an issue important to understanding historical linguistics, dialectology, sociolinguistics, developments in theoretical and applied linguistics. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.

HISP 614 Spanish Dialectology

Credits 3. 3 Lecture Hours.

Analysis of regional linguistic variation from a synchronic and diachronic perspective; topics include varieties spoken in Spain, the Americas, and worldwide; dialect diversification, contact varieties, Spanish-based pidgins and creoles.

Prerequisite: Graduate classification.

HISP 618 Hispanic Traditional and Popular Culture and Religion

Credits 3. 3 Lecture Hours.

Examination of traditional and popular cultural forms in the Hispanic world including legends and proverbs, religious beliefs and practices, music and dance, film and media production; comparison, appreciation, and evaluation of written, visual and oral formats; application of current research methods to the analysis of cultural artifacts.

Prerequisite: Graduate classification.

HISP 620 Studies in Critical Theory

Credits 3. 3 Lecture Hours.

Comprehensive examination of theories of criticism and their application to the study of literature and culture.

Prerequisite: Graduate classification.

HISP 625 U.S. Hispanic Literature and Culture

Credits 3. 3 Lecture Hours.

Study of the origins and evolution of U.S. Hispanic literature, culture and folklore, and U.S. Hispanic regional dialects.

Prerequisite: Graduate classification.

HISP 630 Seminar in Latin American Literature

Credits 3. 3 Lecture Hours.

Study of the literary production of Latin America from colonial times to the present; topics may include colonial literature, Romanticism, Modernism, the novel of the Mexican Revolution, contemporary trends in the Latin American novel, Afro-Hispanic literature, Hispanic Caribbean literature. May be taken three times for credit.

Prerequisite: Graduate classification.

HISP 640 Seminar in History of Ideas in the Hispanic World

Credits 3. 3 Lecture Hours.

Study of cultural and ideological currents as reflected in Spanish literature; topics may include Spain and European culture, European thought in Latin America, the Renaissance in Spanish literature and society, Spain and Western tradition, national identity, U.S. Hispanic nationalism. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.

HISP 645 Hispanic Women Writers

Credits 3. 3 Lecture Hours.

A study of the development of writing by women in the Hispanic world, including Spain, Latin America, and the United States. Topics include identity and nation, building of a feminine aesthetics, the reception of women writers, literary canons and exclusion, women and/in the Latin American boom, Latina writers in the United States.

Prerequisite: Graduate classification.

HISP 646 Seminar in Cultural Encounters and Borders

Credits 3. 3 Lecture Hours.

Study of cultural encounters across borders in geography, language, society, gender and genre. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.

HISP 650 Research Methods in Linguistics

Credits 3. 3 Lecture Hours.

Examination of various methods of linguistics research and their application to issues in Hispanic linguistics; quantitative data collection (questionnaires, surveys, corpora) and statistical analysis; qualitative methods (ethnographic interviews, focus groups) and discourse analysis; mixed methods and triangulation.

Prerequisite: Graduate classification.

HISP 653 Don Quixote and the Hispanic Novel

Credits 3. 3 Lecture Hours.

Don Quixote and the development of modern fiction, its influence in the Hispanic narrative tradition, from Fernández de Avellaneda to Pérez Galdós, G. García Márquez, and Carlos Fuentes, and presence in the U.S. Hispanic novel.

Prerequisite: Graduate classification.

HISP 660 Seminar in Hispanic Cultural Studies**Credits 3. 3 Lecture Hours.**

Intensive study and research on specialized subjects in cultural studies. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HISP 664 Seminar in Hispanic Theater****Credits 3. 3 Lecture Hours.**

Study of Peninsular, Latin American, U.S. Hispanic, Afro-Hispanic theater and performance. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HISP 665 Seminar in Spanish Literature****Credits 3. 3 Lecture Hours.**

Study of Peninsular literary periods, genres and authors from medieval to contemporary times. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HISP 667 Seminar in Hispanic Genre Studies****Credits 3. 3 Lecture Hours.**

Study of selected topics in the works, characteristics and classifications of a given genre cultivated by Hispanic writers. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HISP 668 Modern Latin American Poetry from 1850-2010****Credits 3. 3 Lecture Hours.**

Study of poetry in Latin America between 1850 and 2010 with particular emphasis on "poesía gauchesca," Romanticism, Modernism and avant-garde, along with neobaroque, barroco, language poetry and cybertextual poetry.

Prerequisite: Graduate classification.**HISP 670 Seminar in U.S. Hispanic Literature****Credits 3. 3 Lecture Hours.**

Study of the literary production of U.S. Hispanic authors; topics may include bilingual literature, Nuyorican literature, Cuban American literature, Chicano literature, the immigrant novel, ethnic autobiography, U.S. Hispanic theater, Chicano theater. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HISP 671 Bilingualism in the Spanish-speaking World****Credits 3. 3 Lecture Hours.**

Linguistic, psycholinguistic, and social aspects of bilingualism and multilingualism with special reference to Spanish and the United States; bilingual speakers and bilingual acquisition; bilingual communities: language identity, language maintenance and shift; implications for education and society; written and oral manifestations of bilingualism in the media and arts.

Prerequisite: Graduate classification.**HISP 672 Hispanic Film and Performance Arts****Credits 3. 3 Lecture Hours.**

Theoretical and historical exploration of cinema and performance arts in the Hispanic world: description and interpretation of films and performance arts such as flamenco and folkloric ballet with particular attention to history, ethnology, artistic trends and tendencies, and relationship to other arts.

Prerequisite: Graduate classification.**HISP 675 Spanish Language Teaching Methods****Credits 3. 3 Lecture Hours.**

Overview of the current language methodology as it applies to the teaching of Spanish to native and non-native speakers, pedagogical and professional issues related to teaching Spanish at the college level.

Prerequisite: Graduate classification and approval of instructor.**HISP 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems in the field of Hispanic linguistics, literature or culture.

HISP 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of Hispanic linguistics, literature, or culture. May be repeated for credit.

Prerequisite: Approval of instructor.**HISP 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Thesis research credit given only upon acceptance of completed thesis.

Prerequisite: Twelve hours of advanced courses in Hispanic Studies.

HIST - History

HIST 601 Colonial North America**Credits 3. 3 Lecture Hours.**

The 17th- and 18th-century settlement of European North American colonies; slavery; comparisons of colonial administrations; interactions of Native Americans, Europeans, and African Americans across racial, ethnic, and cultural borders. May be taken two times for credit as content varies.

Prerequisite: Graduate classification.**HIST 604 The Early Republic****Credits 3. 3 Lecture Hours.**

War for Independence; organizing the new government; the Constitutions; Federalists and Jeffersonians; Wars of 1812 and 1846; race, class, and gender in Jacksonian society; political, social, cultural, economic and territorial changes. May be taken two times for credit as content varies.

Prerequisite: Graduate classification.**HIST 613 Reading Seminar in the U.S. in the World****Credits 3. 3 Lecture Hours.**

Reading seminar in American foreign relations from the founding to the present; domestic impact of global events and processes; connections between the United States and the wider world; methodological issues and debates related to the study of internationalized American history.

Prerequisite: Graduate classification.**HIST 614 Research in U.S. in the World****Credits 3. 3 Other Hours.**

Research and writing seminar; topics in American foreign relations and U.S. in the world.

Prerequisite: Graduate classification.**HIST 615 Colonial Latin America****Credits 3. 3 Lecture Hours.**

Social, ethnic, political, economic, religious, military, and cultural institutions in colonial Latin America, including attention to ethnohistory, women, and comparative colonial systems.

Prerequisite: Graduate classification.

HIST 617 Latin America: The National Period**Credits 3. 3 Lecture Hours.**

Social, ethnic, cultural, religious, political, and economic history of Latin America.

Prerequisite: Graduate classification.**HIST 618 Reading Seminar in Gender and Sexuality in History****Credits 3. 3 Lecture Hours.**

Examination of how gender and sexuality operate both as categories of identity and as analytical tools; how scholars have employed them to understand historical processes; how languages shape power relationships; how other vectors of identity (class, race and nation) intertwine with gender and sexuality.

Prerequisite: Graduate classification.**HIST 619 Research Seminar in Gender and Sexuality in History****Credits 3. 3 Lecture Hours.**

Research and writing seminar focused on topics relevant to gender and sexuality in history.

Prerequisite: Graduate classification.**HIST 620 Sectionalism, Civil War and Reconstruction****Credits 3. 3 Lecture Hours.**

Antebellum sectional divisions; causes of the Civil War; military campaigns and political and military leadership; the changing status of African Americans; social, political, economic, cultural and diplomatic developments; Reconstruction.

Prerequisite: Graduate classification.**HIST 621 The Emergence of Modern America****Credits 3. 3 Lecture Hours.**

Social, political, economic and cultural developments in the late 19th and early 20th centuries; industrialization; labor and farmer unrest; immigration; frontier transitions, imperialism.

Prerequisite: Graduate classification.**HIST 623 America since World War II****Credits 3. 3 Lecture Hours.**

The Cold War; wars in Korea, Vietnam, and the Persian Gulf; the Civil Rights and Women's Rights Movements; immigration; social, cultural, and gender controversies.

Prerequisite: Graduate classification.**HIST 624 Readings in Race, Ethnicity, and Migration****Credits 3. 3 Lecture Hours.**

Selected topics and themes in the history of race, ethnicity, and migration; individual and community identity-formation; colonization, slavery, and empire; migration and immigration; social movements; borders and nation-building. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HIST 625 Research Seminar in Race, Ethnicity, and Migration****Credits 3. 3 Lecture Hours.**

Topics and issues in the study of race, ethnicity, and migration history. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HIST 628 Historiography****Credits 3. 3 Lecture Hours.**

Analysis of historical writing and philosophy of history; works of important historians from Herodotus to present; schools, theories and function of history.

Prerequisite: Approval of department head.**HIST 629 Research Methods in History****Credits 3. 3 Lecture Hours.**

Techniques and methods of historical research and writing; disseminating and publishing historical research.

Prerequisite: Graduate classification.**HIST 630 Digital Methods in Historical Research****Credits 3. 3 Lecture Hours.**

Introduction to formal methods of analysis in historical research using computers; and applying quantitative methods to research problems.

Prerequisite: Graduate classification and approval of instructor.**HIST 631 Reading Seminar in United States History to 1877****Credits 3. 3 Other Hours.****Prerequisite:** Approval of department head.**HIST 632 Reading Seminar in United States History after 1876****Credits 3. 3 Lecture Hours.****Prerequisite:** Approval of department head.**HIST 633 The American West****Credits 3. 3 Other Hours.**

Immigrants and settlement patterns; international conflicts; social, racial, ethnic and cultural interactions across frontiers and borders; economic developments; politics and admission of new states into the United States; women's and gender issues; environmental concerns. May be taken two times as content varies.

Prerequisite: Graduate classification.**HIST 634 Maritime History and Sea Power****Credits 3. 3 Lecture Hours.**

Examines the maritime and naval history of the world with emphasis on the Western World since 1600; trade and communication, exploration, technology, maritime communities and naval warfare.

Prerequisite: Graduate classification.**HIST 635 Writing History****Credits 3. 3 Lecture Hours.**

Development of writing skills for graduate students in history; preparation of publishable-quality article-length essays based on primary sources; peer review and criticism.

Prerequisites: Graduate classification; approval of instructor.**HIST 639 Readings in Asian History****Credits 3. 3 Lecture Hours.**

Social and cultural transformation of modern Asia; politics and government; wars and military; imperialism and foreign relations; economic development, society, and culture. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HIST 640 Readings in Atlantic World and Caribbean History****Credits 3. 3 Lecture Hours.**

Selected topics and themes in the history of the Atlantic World and Caribbean; revolutions, European colonialism in Africa and the Americas; transatlantic slave trade; growth of plantation societies; abolition of slavery; post-emancipation period. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HIST 641 Research Seminar in Atlantic World and Caribbean History****Credits 3. 3 Lecture Hours.**

Topics and issues in the history of the Atlantic World and the Caribbean. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.

HIST 643 Reading Seminar in European History from Renaissance to French Revolution**Credits 3. 3 Lecture Hours.**

Reading seminar in European history from the Renaissance to the French Revolution, classic and current themes, debates and methodologies in European history from the Renaissance to the French Revolution.

Prerequisite: Approval of department head.**HIST 644 Reading Seminar in European History from French Revolution to Present****Credits 3. 3 Lecture Hours.**

Reading seminar in European history from the French Revolution to the present; classic and current themes, debates and methodologies in European history from the French Revolution to the present.

Prerequisite: Approval of department head.**HIST 645 Research Seminar in War and Society****Credits 3. 3 Lecture Hours.**

Research and writing seminar focusing on issues and topics in war and society. May be taken four times for credit as content varies.

HIST 646 Readings in War and Society**Credits 3. 3 Lecture Hours.**

Reading seminar focusing on methodological issues related to the study of war and society; impact of organized violence and warfare on social structures; military organizations and operations; the experience of non-combatants. May be taken four times for credit as content varies.

Prerequisite: Approval of instructor and director of graduate studies; graduate classification.**HIST 647 Research Seminar in Asian History****Credits 3. 3 Lecture Hours.**

Social and cultural transformation of modern Asia; politics and government; wars and military affairs; imperialism and foreign relations; economic development; society; culture; religion.

Prerequisite: Graduate classification.**HIST 648 Readings on Topics in Modern European History****Credits 3. 3 Lecture Hours.**

Readings on topics covering the history of the political, social, cultural, intellectual, and diplomatic development of modern Europe as a whole or in part, or that of individual nations, empires, or regions. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HIST 666 History of Technology****Credits 3. 3 Lecture Hours.**

Origins of the subfield; historiography; industrial development and labor relations; impact on the military; gender, class, and other social aspects.

Prerequisite: Graduate classification.**HIST 674 Readings in Chicano-Latino History****Credits 3. 3 Lecture Hours.**

Selected topics and themes related to Chicano-Latino history; race/ethnicity, gender/sexuality, labor adaption and resistance movements; colonialism, transnationalism, immigration; identity, and citizenship. May be taken three times for credit as content varies.

Prerequisite: Graduate classification.**HIST 675 Research Seminar in Chicano-Latino History****Credits 3. 3 Lecture Hours.**

Seminar focuses on researching and writing, core skills for historians; conduct primary source research in a subfield Chicano-Latino history and compose an article-length paper. May be taken three times for credit.

Prerequisite: Graduate classification.**HIST 677 Modern Britain****Credits 3. 3 Lecture Hours.**

Political, social, cultural, economic and diplomatic development of the United Kingdom in the 20th Century. May be taken for credit two times as content varies.

Prerequisite: Graduate classification.**HIST 678 Readings in the Southwest and its Borders****Credits 3. 3 Lecture Hours.**

Reading seminar focusing on how groups in the American Southwest articulate, enforce and challenge difference; brings together disparate historiographies to consider a variety of theoretical and methodological approaches used in understanding borders; examines contact, conflict and change across various kinds of historical and cultural boundaries.

May be taken two times for credit as content varies.

Prerequisite: Graduate classification.**HIST 679 Research Seminar in the Southwest and its Borders****Credits 3. 3 Lecture Hours.**

Research and writing seminar focusing on selected topics and themes in an identified area of Southwest Border Studies. May be taken two times for credit as content varies.

Prerequisite(s): Graduate classification.**HIST 684 Professional Internship****Credits 3. 3 Other Hours.**

Practical experience in an institution or organization that employs professional historians; application of historical knowledge, research and skills outside the classroom, in public, private and non-profit institutions. May be taken up to nine hours for credit.

Prerequisites: Graduate classification; approval of instructor and director of graduate studies.**HIST 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Individual problems of research or scholarly activity not pertaining to thesis or dissertation, or selected instruction not covered by other courses.

Prerequisite: Approval of instructor and department head.**HIST 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of American or European history. May be repeated for credit.

HIST 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Thesis research. Credit given only upon acceptance of completed thesis.

Prerequisite: Approval of department head.

HLTH - Health

HLTH 605 Health Research Methods**Credits 3. 3 Lecture Hours.**

Designing and conducting health education and health promotion research including survey design, sampling, data collection, management and analysis.

Prerequisite: Graduate classification.

HLTH 607 International Health**Credits 3. 3 Lecture Hours.**

Health and health care delivery around the world; how various organizations are addressing global health concerns; includes emerging diseases, eradication of disease, global nutrition, family planning; emphasis on providing health information on a cross cultural environment.

Prerequisite: Graduate classification.**HLTH 609 Applied Epidemiology****Credits 3. 3 Lecture Hours.**

Principles and methods of epidemiology; epidemiologic investigation and research are discussed with emphasis on application of epidemiological methods to health promotion and disease prevention.

Prerequisite: Graduate classification.**HLTH 610 Health Assessment****Credits 3. 3 Lecture Hours.**

Concepts and procedures of health assessment, interpretation of health appraisal instruments; function of health assessment in health education, health promotion and wellness programs.

Prerequisite: HLTH 425 or course in statistics.**HLTH 611 Organization and Administration of Health****Credits 3. 3 Lecture Hours.**

Organizing and management of public health education and health promotion programs; public health administration issues and management skills emphasized.

Prerequisite: Graduate classification.**HLTH 622 Issues and Trends in Health Education****Credits 3. 3 Lecture Hours.**

Background and development of health education as an applied science; current issues and trends in health education and their implications for health education.

HLTH 629 Environmental Health**Credits 3. 3 Lecture Hours.**

Examination of environments that threaten health and implications for human health and community health planning; emphasis on planning and implementing health education and promotion strategies to promote a healthy environment.

Prerequisite: Graduate classification.**HLTH 630 Health Program Planning****Credits 3. 3 Lecture Hours.**

Public health education and promotion program planning including educational diagnosis, selection of educational strategies, program implementation and evaluation; using planning models.

Prerequisite: Graduate classification.**HLTH 631 Community and Public Health****Credits 3. 3 Lecture Hours.**

Community health problems; public health laws; national, state and local health agencies.

HLTH 632 Health Program Evaluation**Credits 3. 3 Lecture Hours.**

Evaluation of public health education and promotion programs; overview of theory of program evaluation, methodology and application.

Prerequisite: Graduate classification.**HLTH 634 Women's Health****Credits 3. 3 Lecture Hours.**

Women's Health. Health and health care concerns of women; emphasis on importance of women's health issues to public health; identification of special concerns for planning and implementation of women's health programs.

Prerequisite: Graduate classification.**HLTH 635 Race, Ethnicity and Health****Credits 3. 3 Lecture Hours.**

Explore racial, ethnic, and cultural dimensions that underlie health and health disparities; special attention to culture, social economic status, and governmental policies as they influence the adaptations of health practices.

Prerequisite: Graduate classification.**HLTH 639 Behavioral Foundations of Health Education****Credits 3. 3 Lecture Hours.**

Theoretical and historical foundations of health behavior research: emphasis placed on understanding and predicting behavior, as well as facilitating behavior change programs through health education.

HLTH 640 Health Intervention and Wellness**Credits 3. 3 Lecture Hours.**

Wellness as a concept and a process; systematic planning, implementation and evaluation of wellness programs and review of research relating to the efficacy of wellness programs and methods.

Prerequisite: HLTH 415 or equivalent.**HLTH 641 Foundations in Health Education****Credits 3. 3 Lecture Hours.**

Introduction to the profession of Health Education; basic history, philosophy, theory, and standards; responsibilities and competencies of the health educator; methods of practice.

Prerequisites: Graduate classification; admission to E-Master's program in Health Education.**HLTH 642 Health Education Ethics****Credit 1. 1 Lecture Hour.**

Basic concepts in health education ethics; ethical dilemmas faced by health educators; articulated ethics framework; includes fairness, justice, and the reduction of unjust disparities in the health education practice.

Prerequisites: Graduate classification; admission to E-Master's program in Health Education.**HLTH 643 Introduction to Epidemiology****Credits 2. 2 Lecture Hours.**

Principles and methods of epidemiology; epidemiologic investigations and research; emphasis on application of epidemiological methods for health promotion and disease prevention.

Prerequisites: Graduate classification; admission to E-Master's program in Health Education.**HLTH 644 Health Education Theory****Credits 3. 3 Lecture Hours.**

Theory in the practice of Health Education; selected theories and their structure, function, and value to health professionals.

Prerequisites: Graduate classification; admission to E-Master's program in Health Education.

HLTH 645 Health Education Research and Program Evaluation**Credits 3. 3 Lecture Hours.**

Design and conduct health education and health promotion research and evaluation; provide an overview of program evaluation and research theory, methodology, and application.

Prerequisite: Graduate classification; admission to E-Master's program in Health Education.

HLTH 646 Health Education Training**Credits 3. 3 Lecture Hours.**

Designing, implementing, and evaluating workforce training for professional health educators; emphasis on evidence-based workforce training.

Prerequisites: Graduate classification; admission to E-Master's program in Health Education.

HLTH 649 Advanced Health Behavior Theory**Credits 3. 3 Lecture Hours.**

Examine the nature of theoretical thinking and its application to health research design, analysis, and program development; explore new theoretical trends in health education sciences research and education; exposed to an informed critique of current health behavior theories and their uses.

Prerequisite: HLTH 639 or approval of instructor.

HLTH 659 Writing for Health Educators**Credits 3. 3 Lecture Hours.**

Practical application activities to enhance writing appropriate for entry level PhD trained professionals in their field; taught in a seminar format.

Prerequisite: Graduate classification.

HLTH 660 Health Issues in Aging, Dying and Death**Credits 3. 3 Lecture Hours.**

Health issues related to aging, dying and death including: health problems of aging individuals; community response to health problems of aging individuals; issues regarding definitions of death; bereavement, grief and mourning and educational implications of aging, dying and death.

Prerequisite: Approval of instructor.

HLTH 669 Professional Skills Development for Health Educators**Credits 3. 3 Lecture Hours.**

Provides the tools necessary to become an effective health education professional; issues will be discussed that will be critical to the success of a future university faculty member.

Prerequisite: Graduate classification.

HLTH 671 Interdisciplinary Seminar in Prevention Science**Credit 1. 1 Lecture Hour.**

Contemporary research programs that represent interdisciplinary field of prevention science; strengths and limitations of diverse theoretical and conceptual bases of research in prevention science, application of research findings to issues related to the prevention of mental, emotional, and physical health problems and the promotion of well-being. May be taken 3 times for credit.

Prerequisite: Graduate classification and enrollment in the interdisciplinary graduate certificate in prevention science or approval of instructor.

Cross Listing: COMM 671, RPTS 620 and SPSY 620.

HLTH 681 Seminar**Credit 1. 1 Lecture Hour.**

Reports and discussions of topics of current interest in the discipline.

HLTH 683 Practicum**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Observations and study of the discipline in school, public and institutional health settings.

Prerequisite: Approval of department head.

HLTH 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Designed to permit students the opportunity for on-the-job training with professionals in schools and public and institutional health agencies.

Prerequisites: 12 semester hours of selected graduate work; approval of department head.

HLTH 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Directed study of selected problems within the discipline. May be repeated for credit.

Prerequisite: Approval of department head.

HLTH 688 Systems Thinking and Complexity in Population Health**Credits 3. 3 Lecture Hours.**

Examination of population health as a complex adaptive system; theoretical underpinnings of complexity science with an emphasis in modeling and simulation; includes emergence, phase transitions, tipping points, resilience, early warning signals, and edge of chaos, cellular automata, fractals, system dynamics and agent-based models.

Prerequisite: HLTH 605 or similar graduate research methods course.

HLTH 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of the discipline. May be repeated for credit.

Prerequisite: Approval of department head.

HLTH 690/KINE 690 Theory of Research in the Discipline**Credits 3. 3 Lecture Hours.**

Theory and design of research problems and experiments in various subfields of the discipline; communication of research proposals and results; evaluation of current research of faculty and students and review of current literature. May be repeated for credit.

Cross Listing: KINE 690/HLTH 690.

HLTH 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of committee chair.

HORT - Horticultural Sciences

HORT 604 Applied Physiology of Horticultural Crops**Credits 3. 3 Lecture Hours.**

Chemical, biological and environmental factors in growth and differentiation and their application to ornamental, fruit and vegetable crops; growth kinetics; source-sink relations; fruit development; seed development and germination; juvenility; apical dominance; growth retardants; pruning; photoperiodism; flowering; sex expression; and senescence.

Prerequisites: MEPS 313 or approval of instructor.

HORT 607/MEPS 605 Plant Biochemistry**Credits 3. 3 Lecture Hours.**

Major metabolic pathways in plant metabolism; emphasis on biochemistry unique to plants.

Prerequisites: BICH 410; MEPS 313 or equivalent.

Cross Listing: MEPS 605/HORT 607.

HORT 608 Plants for Landscape Design**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Identification and use of indigenous and introduced plants in landscape designs; plants for special uses in commercial and residential developments; emphasis on ornamental attributes, identification, cultural requirements, limitations and adaptability in urban and suburban environments for important taxa; discussion of current issues, research, and trends in selection, marketing, and utilization of plants for landscape design. Only one of the following will satisfy the requirements for a degree: HORT 306, HORT 608.

Prerequisite: Graduate classification.**HORT 609 Plants for Landscape Design II****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Identification and use of indigenous and introduced landscape plants; plants for special uses in urban environments; emphasis on plants' ornamental attributes, cultural requirements, and adaptability in urban and suburban environments. Only one of the following will satisfy the requirements for a degree: HORT 308, HORT 609.

Prerequisites: Graduate classification.**HORT 610/MEPS 610 Physiological and Molecular Basis for Plant Stress Response****Credits 3. 3 Lecture Hours.**

Provide the tools to understand the molecular and physiological consequences caused by environmental factors (abiotic and biotic) on plant growth and development and the mechanisms of stress adaptation to stress.

Prerequisite: MEPS 313 or equivalent.**Cross Listing:** MEPS 610/HORT 610.**HORT 611 Ecology of Urban Landscape****Credits 3. 3 Lecture Hours.**

Basic concepts and current topics in ecology or urban landscapes; role of plants in urban and fragmented ecosystems ranging from individual plant responses to changes in ecosystem function; discuss recent literature in the field of urban plant ecology.

Prerequisite: An undergraduate or graduate class in plant biology or plant ecology is recommended.**HORT 618/MEPS 618 Root Biology****Credits 3. 3 Lecture Hours.**

Basic concepts and current topics in root-soil ecology; managed and natural ecosystems including grasslands, cropping systems and forests; role of roots in the rhizosphere, the effects of soil, nutrient and water stress and climate change in C and N cycling and carbon sequestration; participate in discussions and critique recent literature.

Prerequisite: Approval of instructor.**Cross Listing:** MEPS 618/HORT 618.**HORT 619 Plant-Associated Microorganisms****Credits 3. 3 Lecture Hours.**

Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improved plant health and sustainable agriculture; microbial roles in food safety and future challenges; discussion of current literature.

Prerequisites: Basic plant biology or plant ecology is recommended; microbiology is helpful, but not required. Cross listed with PLPA 619 and MEPS 619.**HORT 626 International Floriculture Marketing****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Importance, cost and opportunities in marketing floral products, fresh cut flowers, flowering potted plants, foliage plants, and bedding/garden plants; topics include world production areas, economic value, species grown, marketing channels, retail environments, current/future consumers, postharvest handling, promotion/advertising, perceived/added value, marketing trends and employment opportunities.

Prerequisite: Graduate classification.**HORT 630 Post-Harvest Biology, Physiology and Genetics of Plants****Credits 3. 3 Lecture Hours.**

Overview of biological, physiological and genetic mechanisms which impart phenotypes associated with quality and value of plant products; current emphasis in areas of ripening, senescence, fruit and flower development, and relevant applications of biotechnology will be focus of course.

Prerequisite: Approval of instructor.**HORT 640 Phytochemicals in Fruits and Vegetables to Improve Human Health****Credits 3. 3 Lecture Hours.**

Current scientific knowledge about the role of phytochemicals in their diet; increase the knowledge and awareness of successful, cost effective, public and private integrated approaches to reduce the health and economic burden of chronic diseases; provide instructional curricular resources media for dissemination through conventional and distance education technology.

Prerequisite: Approval of instructor.**HORT 641 Science of Foods for Health****Credits 3. 3 Lecture Hours.**

Recent scientific advances on knowledge of foods for health using evidence based research justification; includes interdisciplinary topics emphasizing horticultural science, nutrition and biochemistry.

Prerequisite: Approval of instructor.**HORT 645/SCSC 645 World Agriculture and International Plant Breeding**
Credit 1. 1 Lecture Hour.

Evolution of world agriculture; plant breeding and improved varieties; international agricultural research centers and green revolution; population growth; environmental challenges; IPR; role of plant breeding and biotechnology in meeting world food needs.

Prerequisite: SCSC 304, HORT 404/GENE 404 or approval of instructor.**Cross Listing:** SCSC 645/HORT 645.**HORT 681 Seminar****Credit 1. 1 Lecture Hour.**

Student and staff participation in review of literature and reporting on current developments in research on production and processing of horticultural crops. Required of all graduate students in horticulture and floriculture. May be taken more than once but not exceed 3 hours of credit.

Prerequisite: Graduate classification.**HORT 684 Professional Internship****Credits 1 to 4. 1 to 4 Other Hours.**

Program planned to provide professional training in student's particular field of interest. Faculty and employer will supervise the activity. Work-study planned as a part of the Master of Agriculture degree program in fruit, ornamentals or vegetable production, processing and handling or landscape or garden design and maintenance.

Prerequisite: Approval of instructor.

HORT 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Individual problems of research or scholarly activity not pertaining to thesis or dissertation, or selected instruction not covered by other courses. Final documentation of directed study is required.

Prerequisite: Approval of instructor.**HORT 689 Special Topics in...****Credits 0 to 4. 0 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of horticulture. May be repeated for credit.

Prerequisite: Approval of department head.**HORT 690 Theory of Research****Credit 1. 1 Lecture Hour.**

Design of research experiments in various fields of horticulture and floriculture and evaluation of results with the aid of examples taken from the current scientific literature. May be repeated for credit.

HORT 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research in horticultural problems for thesis or dissertation.

HORT 693 Professional Study**Credits 1 to 9. 1 to 9 Other Hours.**

Approved professional paper undertaken as the requirement for the Master of Agriculture. May be taken more than once, but not to exceed 3 hours of credit towards a degree.

Prerequisite: Graduate classification.

HPCH - Health Promo Comm Hlth

HPCH 603 Social and Behavioral Determinants of Health**Credits 3. 3 Lecture Hours.**

An overview of theories and principles focusing on social and behavioral determinants of health, the social-ecological approach to the examination of health and health behaviors, social patterns of health behavior, and an introduction to health promotion and public health interventions. Intended for non-majors.

HPCH 604 Social Ecology and Global Health**Credits 3. 3 Lecture Hours.**

Social, behavioral and ecological interventions in developing countries addressing major and emerging communicable diseases, pandemics, vaccine delivery, water and food chain safety, pollution and climate issues, addressed through theory and critical review of interventions.

HPCH 605 Applied Research Methods**Credits 3. 3 Lecture Hours.**

Overview of quantitative and qualitative methods used by public health professionals, advantages and limitations of different methods, mechanisms for gathering data in a community setting, techniques for managing and analyzing data, and strategies for presenting information to community members.

HPCH 606 Public Health Informatics**Credits 3. 3 Lecture Hours.**

Overview of the field of public health informatics (PHI); informatics competencies for public health practitioners; key informatics challenges and current topics; evidence-based public health; data and vocabulary standards; interoperability and health information exchange; electronic health records for public health use; methods for evaluation of disease registries and public health surveillance systems; searching public health literature; sociotechnical components of public health information systems; matching business process and workflow analysis with user and functional requirements; database design; Structured Query Language (SQL); information visualization; bioinformatics tools. May be taken three times for credit.

HPCH 607 Biological Basis of Health and Common Diseases**Credits 3. 3 Lecture Hours.**

Designed to provide public health students grounding in the biological basis of health human functioning and the biology of diseases that they are likely to encounter in public health practice; overview of molecular biology, genetics, immunology, diabetes, obesity, cardiovascular disease, hypertension, the metabolic syndrome, cancer, respiratory infections, intestinal infections, and emerging infectious diseases; recommended for all public health students who do not have significant training in medicine, nursing, pharmacy, or closely related field.

HPCH 610 Community Organization and Assessment**Credits 3. 3 Lecture Hours.**

The nature of community and its role as setting, target and facilitator of health among its population; approaches to assessing community factors that influence health status; application of that information in planning community-based interventions.

HPCH 611 Program Planning**Credits 3. 3 Lecture Hours.**

Use of theory and evidence in planning public health interventions, appropriate objective development, integration of levels of intervention, consolidation of intervention strategies into coherent program design, program implementation, diffusion and institutionalization.

HPCH 612/PHSB 612P**Credits 3. 3 Lecture Hours.**

Public Health Interventions. Examination of the conceptualization and theoretical foundation, design, implementation, and effectiveness of specific public health interventions at the individual, interpersonal, organizational, community, and policy levels for addressing particular chronic or infectious diseases related to health conditions or problems; specific focus may vary by semester.

Prerequisite: HPCH 603.**Cross Listing:** PHSB 612P.**HPCH 613 Program Evaluation****Credits 3. 3 Lecture Hours.**

Study of program evaluation techniques; focuses on issues relevant to the assessment and evaluation of health promotion interventions and examines the social context of program evaluation and a variety of epistemological orientations.

Prerequisites: HPCH 603 and HPCH 605; HPCH 611 or concurrent enrollment.

HPCH 620 Introduction to Border Health**Credits 3. 3 Lecture Hours.**

This course introduces the U.S.-Mexico border as a dynamic region where public health problems grow out of a combination of factors in the United States and Mexico. A major focal point is community health, to which the course relates the various public health disciplines as an introduction to public health. Overarching factors such as population movement, diverse sociocultural and economic demographics, and a rapidly expanding population influence infectious disease transmission and general population health. Information about the history and cultures of the South Texas region provide background information for understanding the confluence of factors shaping regional public health. Economic forces that influence health include the maquiladora system of binational factories that operate in a free-trade zone environment and the need for hand labor in various economic sectors in different parts of the United States. Environmental challenges in the region include water pollution and scarcity, air pollution, food supply problems, and poor urban and rural infrastructure. Policy and political factors also affect population health and economics along the border (e.g., NAFTA, homeland security, and state regulation of health insurance plans).

HPCH 625 Health of Refugees and Displaced Populations**Credits 3. 3 Lecture Hours.**

Basic principles, terms and tools necessary to design health interventions to address health emergencies involving refugee and displaced populations who have been displaced by war or armed conflict, famine, infectious diseases, political turmoil or other forms of disaster; focus on international and cross-cultural settings.

HPCH 635 Community Health Development**Credits 3. 3 Lecture Hours.**

The theory and practice of community development for health; a comparative study of community development models in diverse communities; analysis of how to create systematic and sustainable community change related to health and healthy communities, with attention to rural, minority and underserved communities.

HPCH 636 Study in China: Global Health Experience**Credits 3. 3 Lecture Hours.**

Study abroad designed for those with interests in global health; two weeks in Nanjing, Shanghai and Beijing of China; visit different public health agencies, health care, delivery organizations and community health centers; attend lectures delivered by public health and medicine faculty members from host institutes and discuss with Chinese public health students and professionals; includes pre-travel lectures and post-travel presentations.

Prerequisites: Approval of instructor.**HPCH 637 Principles of Health Program Management****Credits 3. 3 Lecture Hours.**

This course prepares the student with knowledge and skills to assume a role in the management of health promotion programs. The course covers management theory, leadership, organizational assessment, planning, decision-making, organizational structure, budgeting, marketing and human resource management.

HPCH 638 Seminar on Alcohol, Tobacco and Other Drugs**Credits 2 to 3. 2 to 3 Lecture Hours.**

In-depth study of public health issues and concerns related to alcohol, tobacco and other drug use; includes overview of contributing causative and mediating factors of drug use and theory-based prevention and intervention strategies and programs.

HPCH 639 HIV/AIDS: A Public Health Issue**Credits 0 to 3. 0 to 3 Lecture Hours.**

Overview of HIV/AIDS, including history of the epidemic, trends and geographic disparities, economic and social impact, high risk populations, prevention interventions, treatment and care; both domestic and international aspects of the HIV/AIDS epidemic; focus on prevention and social and policy focus that divert attention away from practical steps that need to be taken to prevent the spread of HIV.

HPCH 640 Diet and Lifestyle Interventions for Obesity, Diabetes and Cardiovascular Disease**Credits 3. 3 Lecture Hours.**

Diet and Lifestyle Interventions for Obesity, Diabetes, and Cardiovascular Disease. Diet and Lifestyle Interventions for Obesity, Diabetes and Cardiovascular Disease reviews social and behavioral research related to the prevention and control of these diseases. The course reviews policy guidelines, the social and behavioral activities that are associated with beneficial clinical outcomes, and the methods used to increase these activities.

HPCH 641 Coaching Health Behavior Change**Credits 3. 3 Lecture Hours.**

Training in coaching lifestyle behavior change to prevent or manage common chronic diseases, effectiveness of lifestyle coaching; theories and practices in coaching for disease prevention; motivational and other interviewing techniques; goal setting and legal concerns.

HPCH 665 Proposal Writing and Grants Management**Credits 3. 3 Lecture Hours.**

Introduction to skills needed to successfully develop proposals for funding in fields related to healthcare and social services; focuses on best methods used by community-based organizations to develop public and private funding applications, develop and maintain relationships with the funding agency and assess organizational implications of applying for and managing grants.

Prerequisite: Approval of instructor.**HPCH 670 Seminar in History and Context of Public Health****Credits 3. 3 Lecture Hours.**

This doctoral seminar will introduce doctoral students to major themes in public health with emphasis on the evolution of public health problems, and the future of public health. This course sets public health within context and discusses relationship to other related fields of study.

Prerequisite: Approval of instructor.**HPCH 671 Seminar in Public Health Theory****Credits 3. 3 Lecture Hours.**

This doctoral seminar will review and reflect upon theories and perspectives that relate to public health problems and proposed solutions. Students will critique current social and behavioral theories, discussing commonalities and differences across multiple theoretical approaches for addressing public health problems.

Prerequisite: Approval of instructor.**HPCH 672 Seminar in Public Health Interventions****Credits 3. 3 Lecture Hours.**

This doctoral seminar will focus on the examination of the theoretical foundation, implementation and effectiveness of public health interventions from a multi-level approach. The emphasis will be on the translation from research to practice, understanding the elements of evidence-based intervention strategies.

Prerequisite: Approval of instructor.

HPCH 673 Seminar in Public Health Evaluation**Credits 3. 3 Lecture Hours.**

This doctoral seminar will review the conceptual and methodological elements of public health evaluations, providing an opportunity for reflection on the strengths and weaknesses of different public health evaluations. Students will be asked to design an evaluation strategy for a self-identified health problem/intervention approach.

Prerequisite: Approval of instructor.**HPCH 674 Seminar in Social and Behavioral Health****Credits 3. 3 Lecture Hours.**

This doctoral seminar will cover topics of interest to faculty and students within the purview of social and behavioral health. The topic will be assigned the first day of class by mutual agreement of participating students and faculty. Students will be expected to reflect critically on the assigned literature and participate in classroom discussions. May be taken four times.

Prerequisite: Approval of instructor.**HPCH 684 Practicum****Credits 1 to 3. 1 to 3 Other Hours.**

Field placement experience where students work closely with a departmental faculty member and appropriate field professional(s) applying skills and techniques acquired through course work. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of student's academic advisor.**HPCH 685 Directed Study****Credits 1 to 12. 1 to 12 Other Hours.**

Student investigation of a topic not covered by other formal courses. May be repeated for a maximum of 12 hours total credit.

Prerequisite: Approval of academic advisor.**HPCH 686 Directed Research****Credits 1 to 9. 1 to 9 Other Hours.**

Student research initiative not within the scope of a thesis or dissertation. May be repeated for a maximum of 9 credits.

Prerequisite: Approval of academic advisor.**HPCH 689 Special Topics - Social And Behavioral Health****Credits 1 to 4. 1 to 4 Other Hours.**

Revolving topics seminar in an area of specialization within the department. May be repeated for credit.

HPCH 691 Research**Credits 1 to 6. 1 to 6 Other Hours.**

Research for thesis or project. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of academic advisor and department head.**HPCH 791 Doctoral Capstone****Credits 1 to 9. 1 to 9 Other Hours.**

Doctoral dissertation or equivalent project(s). Must be taken on a satisfactory/unsatisfactory basis. May be repeated for credit.

Prerequisite: Approval of instructor.

HUMA - Humanities

HUMA 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Directed studies in specific problem areas in the humanities. May be repeated for credit.

Prerequisite: Approval of instructor.

IBST - Institute Biosci & Tech

IBST 605 Biomedical Research Professional Development**Credit 1. 1 Lecture Hour.**

Designed to provide a unique opportunity to improve professional presentation skills; includes public speaking, presentation time controlling, question handling and meeting monitoring; prepares for committee meetings and to pass qualifying exams; benefits includes future job interviews and career development.

IBST 681 Seminar: Medical Sciences**Credit 1. 1 Lecture Hour.**

This is a seminar course given by national and international experts in the field of biomedical research. The course is designed to provide a unique opportunity for graduate students to keep pace with the latest knowledge in biomedical science and technology, and to apply the knowledge in their graduate projects. Students will benefit from the course in many ways, including development of critical scientific thinking skills, biomedical research project design and interpretation, improved communications skills and networking opportunities with leaders in the field. The course is mandatory for all IBT Graduate Students.

IBST 689 Special Topics: Biomedical Research of Professional Development**Credits 1 to 4. 1 to 4 Lecture Hours.**

The course is designed to provide a unique opportunity for graduate students to improve their professional presentations skills, which includes but not limits to public speaking, presentation time controlling, question handling and meeting monitoring, et al. The immediate goal is to help students to prepare for their committee meetings and to pass their qualifying exams. Eventually, the students will benefit from the course for many ways including future job interviews, career development, et al. The course is mandatory for the graduate students who have not passed their qualifying exams. The students who have passed their qualifying exams are encouraged to continue to take the course, but it is optional.

IBST 691 Research Credit: Medical Sciences**Credits 1 to 9. 1 to 9 Lab Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of supervisory professor in chosen field.

IBUS - International Business

IBUS 645/FINC 645 International Finance**Credits 1 to 3. 1 to 3 Lecture Hours.**

Problems confronted by financial managers of firms with international business operations; international money and capital markets; exchange rate risks and political risks. May be repeated for up to 3 hours credit. Classification 6 students may not enroll in this course.

Prerequisite: FINC 612 or FINC 629 or FINC 635.**Cross Listing:** FINC 645/IBUS 645.**IBUS 646/ACCT 646 International Accounting****Credits 3. 3 Lecture Hours.**

Introduction and examination of accounting issues unique to multinational enterprises and international business activity. Classification 6 students may not enroll in this course.

Prerequisites: ACCT 328; FINC 341.**Cross Listing:** ACCT 646/IBUS 646.

IBUS 667 Multinational Enterprises**Credits 3. 3 Lecture Hours.**

Graduate seminar in international business; multinational enterprises (MNEs) are studied from various perspectives including economics, management, entry and expansion strategies, contractual agreements, transfer pricing, impacts on home and host countries, MNE-state relations, regional integration, public policies towards MNEs.

Prerequisite: Graduate classification.**Cross Listing:** MGMT 667 and INTA 629.**IBUS 677/MKTG 677 Multinational Marketing Management****Credits 3. 3 Lecture Hours.**

Theoretical and empirical materials on multinational marketing; nature and justification of international trade, analysis of environments faced by multinational firms and formulation of multinational marketing strategy. Classification 6 students may not enroll in this course.

Prerequisite: MKTG 613 or 621 or equivalent.**Cross Listing:** MKTG 677/IBUS 677.**IBUS 678/MGMT 678 International Management****Credits 3. 3 Lecture Hours.**

Survey of the issues, problems, challenges, and opportunities facing organizations competing in a global economy; includes: the environment of international management, international strategies, forms of organization design used by multinational firms, managing human resources in an international context, and cultural and control issues facing the international manager.

Prerequisite: Graduate classification.**Cross Listing:** MGMT 678/IBUS 678.**IBUS 679/MGMT 679 International Business Policy****Credits 2 to 3. 2 to 3 Lecture Hours.**

Determinants of U.S. competitiveness in international markets; the international environment of business; introduction to multinational enterprises, global competition, international organizations, protection of intellectual property; international trade regulation; strategic trade theory.

Prerequisite: Graduate classification.**Cross Listing:** MGMT 679/IBUS 679.**IBUS 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed study of selected international business problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisite: Graduate classification and approval of instructor.**IBUS 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of international business. May be repeated for credit. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.**IBUS 692 International Professional Study II****Credits 1 to 12. 1 to 12 Lecture Hours.**

Approved professional studies abroad on international business issues and organizations. May meet requirements for the MBA or MS degrees in business. May be taken three times for credit. Must be taken for a grade.

Prerequisite: Admission to approved program.**IBUS 693 International Professional Study****Credits 1 to 12. 1 to 12 Other Hours.**

Approved professional studies abroad on international business issues and organizations. May meet requirements for the MBA or MS degrees in business. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Admission to approved program; approval of program coordinator.

ICPE - Interdisc. Curr. Prg. Energy

ICPE 601 Environmental Issues of Energy Systems**Credit 1.5. 1.5 Lecture Hour.**

Introduction to energy-related engineering principles and energy conservation efficiency; basic processes and chemicals/materials used in the current and emerging energy systems; impact on the environment; approaches for minimizing contaminants released by usage of energy sources.

Prerequisite: Graduate classification.**ICPE 602 Reservoir Characterization and Modeling****Credit 1.5. 1.5 Lecture Hour.**

Application of geostatistical techniques to build reservoir models through integration of geological core/well log, seismic and production data to generate a consistent reservoir description; background and insights to geostatistical modeling techniques and situation where the application of geostatistics could add value.

Prerequisite: Graduate classification.**ICPE 603 Bioenergy****Credit 1.5. 1.5 Lecture Hour.**

Introduction to the fundamentals of biomass (biochemistry and resources); basics of important processing technologies for the pre-treatment and conversion of biomass to useful products.

Prerequisite: Graduate classification.**ICPE 604 Energy Systems Engineering I****Credit 1.5. 1.5 Lecture Hour.**

State-of-the-art topics for energy systems engineering including modelling of energy systems, mixed integer and continuous optimization techniques for the analysis of energy systems, model based control, and interactions of design, control and scheduling of power and energy systems.

Prerequisite: Graduate classification.**ICPE 605 Energy Systems Engineering II****Credit 1.5. 1.5 Lecture Hour.**

State-of-the-art topics for energy systems engineering including modeling of hybrid feedstock energy systems, energy supply chain networks, polygeneration systems, model predictive control, fuel cells and combined heat and power systems.

Prerequisite: ICPE 604.**ICPE 606 Introduction to Optimization****Credit 1.5. 1.5 Lecture Hour.**

Basics of deterministic optimization with focus on modeling and computer solutions; practical examples to develop understanding of modeling and solution techniques that can be used to improve decision-making; linear, non-linear, mixed integer, combinatorial and network optimization problems.

Prerequisite: Graduate classification.

ICPE 607 Energy Accounting**Credit 1.5. 1.5 Lecture Hour.**

Exploration of the financial aspects of the energy industry; emphasis on oil and gas with additional attention placed on all sources of power generation including alternatives; interactive with cases worked in each session; advanced preparation guided by the instructor.

Prerequisite: Graduate classification.

ICPE 608 Beyond Science and Technology: The Role of Policy in Future of Energy in the U.S.**Credit 1.5. 1.5 Lecture Hour.**

Introduction to the history of U.S. science and technology policy with a specific emphasis on energy; focus on regulatory rules, the key government agencies at the national level, the role states and localities play, how government funds are allocated in research and technology transfer related to energy innovations, the role of universities, the threats and opportunities to energy-related educational success at all levels.

Prerequisite: Graduate classification.

ICPE 609 Introduction to U.S. Energy Law and Policy**Credit 1.5. 1.5 Lecture Hour.**

Introduction to energy law and regulation in the United States; focus on the key sources of energy (both nonrenewable and renewable) driving the U.S. economy, and identifies the various challenges facing the industry in their production and distribution; key regulations and laws governing energy production as well as the jurisdictional and regulator divisions between federal and state governments.

Prerequisite: Graduate classification.

ICPE 610 The Global Energy Future**Credit 1.5. 1.5 Lecture Hour.**

Global energy outlook including energy demand, population growth and humanitarian issues, environmental and climate concerns, and the energy/water nexus and water scarcity; evolution of the global oil and gas industry; controlling nations, laws and agencies (OPEC, IEA, etc.); international and domestic climate change laws and policies; global future of climate change adaptation and mitigation.

Prerequisite: Graduate classification.

ICPE 611 Economics of Energy**Credit 1.5. 1.5 Lecture Hour.**

Basics of economics concepts as they relate to energy applications; how the government policies affect the energy economy; present the economics of energy and climate change; introduction to renewable technologies and their impact.

Prerequisite: Graduate classification.

ICPE 612 Entrepreneurship in Energy**Credit 1.5. 1.5 Lecture Hour.**

Focus on developing an understanding of the techniques and issues for growing emerging organizations in the energy field; participants will be guided through a range of issues faced by a venture team in building and growing a new organization or pursuing innovative projects inside existing organizations.

Prerequisite: Graduate classification.

ICPE 613 Natural and Shale Gas Monetization: Technologies, Fundamentals, Economics and Applications**Credit 1.5. 1.5 Lecture Hour.**

Focuses on important role played by natural and shale gas in energy market and the potentials to grow; major monetization processes including production, treatment, processing and conversion; key economic and technical aspects as they pertain to the processing technologies and the supply chains of natural and shale gas.

Prerequisite: Graduate classification.

ICPE 614 CO₂ Sequestration**Credit 1.5. 1.5 Lecture Hour.**

Introduction to the goals and methods of CO₂ sequestration in the subsurface and of monitoring its effectiveness; discussion and explanation of current technological challenges and problems in monitoring CO₂ in the subsurface and in implementing sequestration for mitigating climate change; addresses how carbon is transferred between atmosphere, hydrosphere, biosphere and geosphere by natural processes; basic geologic processes influencing sequestration programs.

Prerequisite: Graduate classification.

ICPE 615 Smart Grid Fundamentals**Credit 1.5. 1.5 Lecture Hour.**

Fundamentals of electricity grid development; monitoring, control and protection; renewable generation; microgrids and grid integration; electricity markets; long term planning and associated risk, and grid robustness.

Prerequisite: Graduate classification.

ICPE 616 Multi-functional Materials for Energy Conversion**Credit 1.5. 1.5 Lecture Hour.**

Focus on the two most important multi-functional materials (MFMs): piezoelectric materials and shape memory alloys (SMA); understanding the materials and how devices are designed using these materials; study of energy conversion via: (1) actuators that convert electrical or thermal energy into mechanical work; and (2) energy harvesting, in which mechanical work is converted into electrical energy.

Prerequisite: Graduate classification.

ICPE 617 Gas Separations for Energy: Fundamentals, Applications and New Directions**Credit 1.5. 1.5 Lecture Hour.**

Robust foundation of advanced expertise in gas separation technologies including (i) solid-phase absorbent technologies, (ii) liquid amine-based adsorption technologies, (iii) polymeric and inorganic membrane technologies, and (iv) emerging reactive separation for process intensification.

Prerequisite: Graduate classification.

ICPE 618 Carbon Capture, Utilization and Storage, CCUS**Credit 1.5. 1.5 Lecture Hour.**

Introduction to technologies for carbon capture, modeling and technoeconomic analysis and comparison of different carbon capture technologies, and economics of carbon capture, utilization, and storage statewide and nationwide.

Prerequisite: Graduate classification.

ICPE 619 Nanomaterials Engineering and Energy Storage**Credit 1.5. 1.5 Lecture Hour.**

Nanomaterial synthesis and processing with an emphasis on the creation of materials relevant to energy storage (batteries, capacitors, etc.). Prior knowledge of an undergraduate engineering level of familiarity of chemistry and physics is desirable.

Prerequisite: Graduate classification.

ICPE 620 Thermoelectric Materials and Devices**Credit 1.5. 1.5 Lecture Hour.**

Methods useful for the synthesis of both bulk crystals and nanomaterials (nanoparticles and nanowires); focus on the underlying thermodynamics and kinetic principles involved in the synthesis of these materials; pathways useful for the integration of nanomaterials into functional thermoelectric devices, methods used for ascertaining the thermoelectric performance of materials and devices.

Prerequisite: Graduate classification.

ICPE 621 Thermoelectrics: Fundamentals of Electronic and Thermal Transport**Credit 1.5. 1.5 Lecture Hour.**

Fundamentals of electronic and phononic transport phenomena; understanding of thermodynamics and transport properties from a microscopic viewpoint; thermal transport theories for analyzing and designing energy conversion devices, nanomaterials, microelectronics and nano/micro-electromechanical systems (NEMS/MEMS).

Prerequisite: Graduate classification.**ICPE 622 Energy Efficiency in Buildings****Credit 1.5. 1.5 Lecture Hour.**

Introduction to energy efficiency in buildings; understanding the energy use in buildings, the heating and cooling requirements, the role of renewable energy resources, the impact of lighting, the role of optimal control measures in existing and new buildings, the verification of energy savings, and the building energy simulation.

Prerequisite: Graduate classification.**ICPE 623 Water-Energy-Food Nexus: Towards Sustainable Resource Allocation****Credit 1.5. 1.5 Lecture Hour.**

Securing energy, clean water and greening agriculture; principles of the Water-Energy-Food nexus and its application to the corresponding three themes; includes hands on laboratory.

Prerequisite: Graduate classification.**ICPE 624 Energy-Water-Nexus****Credit 1.5. 1.5 Lecture Hour.**

Various aspects of energy-water nexus including the fundamentals, technologies, applications and economics; focus on energy production, conversion and utilization; connection with water production, treatment, delivery and usage.

Prerequisite: Graduate classification.**ICPE 625 Integrated Risk Management for Exploration and Production Projects****Credit 1.5. 1.5 Lecture Hour.**

Structured introduction to project systems and advance analysis of integrated project risks to practicing engineers and decision makers in the energy sector; emphasis on risks in context of a) project phase-gate process, b) systems representation, and c) flow across different functional and design requirements, areas of expertise /specialization and construction/installation methods.

Prerequisite: Graduate classification.**ICPE 626 Safety in Energy Systems****Credit 1.5. 1.5 Lecture Hour.**

Role of leadership and development of management systems to ensure safety performance in energy systems, a systems approach to safety management for energy systems, lifecycle analysis and the energy supply chain, and applications of engineering principles of process safety and hazards analysis.

Prerequisite: Graduate classification.**ICPE 627 Interfacial Phenomena of Energy Systems****Credit 1.5. 1.5 Lecture Hour.**

Fundamentals of interfacial phenomena, energy related interfacial materials and interfacial issues of energy systems; specific energy-related applications include oil recovery, lubrication, thermal management, photovoltaics, battery, fuel cells and supercapacitors.

Prerequisite: Graduate classification.**ICPE 628 Multi-physics Geomechanisms for Energy Applications****Credit 1.5. 1.5 Lecture Hour.**

Focuses on main physical phenomena and processes that control the behavior of porous media; formulation for non-isothermal multiphase flow and transport problems in deformable porous media; problems of practical interest in the broad field of geo-engineering and geo-mechanics.

Prerequisite: Graduate classification.**ICPE 631 Sustainability Considerations In Energy****Credit 1.5. 1.5 Lecture Hour.**

Introduction to the principles of sustainability within energy systems; examination of economic, environmental and societal aspects using quantitative assessments; promotion of informed decision-making through explanations of available assessment tools, the boundaries of analysis and process integration considerations.

Prerequisite: Graduate classification.**ICPE 681 Seminar****Credits 2. 2 Other Hours.**

Seminars and presentations on important developments and current research in energy; delivered by distinguished energy experts from academia, industry and government.

Prerequisite: Graduate classification.**ICPE 689 Special Topics In...****Credits 1 to 4. 1 to 4 Other Hours.****ICPE 691 Research****Credits 1 to 18. 1 to 18 Other Hours.**

Research for thesis or dissertation.

IDIS - Industrial Distribution

IDIS 611 Current Issues in Industrial Distribution**Credits 3. 3 Lecture Hours.**

Contemporary issues and trends affecting participants in the industrial distribution industry; opportunities and challenges for leaders identified and explored from the perspective of industrial distributors, manufacturers and end users.

Prerequisite: Enrollment in the MID program.**IDIS 614 Industrial Distributor Networks****Credits 3. 3 Lecture Hours.**

Industrial distributor's network channel in distribution centers, warehouse management systems, hot-shot and standard truck fleets, forecasting and purchasing strategies for technical products; an examination of the integration of the field and inside sales force into distributor network strategy.

Prerequisite: Enrollment in the MID program.**IDIS 621 Industrial Distributor Processes I****Credits 3. 3 Lecture Hours.**

Industrial distributor processes with an emphasis on assessing the value added effectiveness of specific industrial distributor initiatives.

Prerequisite: IDIS 644.**IDIS 622 Industrial Distributor Processes II****Credits 3. 3 Lecture Hours.**

Continuation of IDIS 621.

Prerequisite: IDIS 621.

IDIS 624 Strategic Relationships for Industrial Distributors**Credits 3. 3 Lecture Hours.**

Issues related to establishing and maintaining a beneficial relationship between distributors and manufacturers; developing effective buyer-seller relationships in the industrial distribution sector.

Prerequisite: Enrollment in the MID program.**IDIS 634 Quality Concepts in Industrial Distribution****Credits 3. 3 Lecture Hours.**

Concepts, issues and techniques used to plan, analyze, control, and improve the quality of industrial distribution products and processes for increased consumer satisfaction.

Prerequisite: IDIS 655.**IDIS 644 Industrial Distributor Information and Technology Management****Credits 3. 3 Lecture Hours.**

Industrial distributor's use of information systems to manage operations; combination of information systems and automation to achieve increased cross docking drop ships and automated tracking of industrial distributor operations metrics.

Prerequisite: IDIS 614.**IDIS 655 Global Distribution****Credits 3. 3 Lecture Hours.**

Issues in global distribution on a small to large scale; emphasis on competitive global business strategies, cultural and exchange issues, distribution practices of other countries, global distribution networks, and transportation issues across the globe; an optional one week international trip to solidify foundation in international distribution concepts and strategies.

Prerequisite: IDIS 611.**IDIS 664 Distribution Profitability Analysis****Credits 3. 3 Lecture Hours.**

Integrating advanced financial and accounting analysis useful to distribution executives in assessing the financial performance of distribution operations. Concepts and techniques in using financial statements and industrial distribution industry studies to manage cash flow, debt, working capital risk, capital budgeting, credit, receivables, inventory, personnel and profitability.

Prerequisite: IDIS 624.**IDIS 674 Industrial Distribution Enterprise****Credits 3. 3 Lecture Hours.**

Explore changing environment of industrial distribution from globalization effects, environmental conditions, industrial distribution culture and organizational factors; focus on building, achieving and sustaining a competitive advantage.

Prerequisite: IDIS 664.**IDIS 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Individual and group problems dealing with application of industrial distribution theory and practice; foreign and domestic projects of special interest. May be repeated for credit.

Prerequisites: Enrollment in the MID program and approval of program director.**IDIS 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of industrial distribution. May be repeated for credit.

Prerequisite: Approval of MID program director.**IDIS 693 Professional Study****Credits 1 to 6. 1 to 6 Other Hours.**

Approved professional study project in industrial distribution; preparation of a record of study summarizing the rationale, procedure and results of the completed study.

Prerequisite: Approval of MID program director.

IMED - Internal Medicine

IMED 800 Internal Medicine Clerkship**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

25 to 15. General outpatient and inpatient internal medicine, with patient work-up and management under supervision of the clinical faculty; participation in clinical rounds, conferences, seminars, and diagnostic evaluations.

Prerequisite: Satisfactory completion of year two of the medical curriculum.**IMED 801 Hematology/Oncology****Credits 1.25 to 10.**

It is the purpose of this elective to provide the student with an introduction to clinical oncology and laboratory hematology/oncology, particularly the approach to and evaluation of the patient with a hematologic/oncology disorder. The student will assist /perform routine hematologic procedures, including evaluation of peripheral smears and possibly one marrow biopsies.

IMED 802 Internal Medicine – Community**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. To provide an introductory experience in the practice of internal medicine.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**IMED 803 Clinical Cardiology and Electrocardiography****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will introduce the students to the clinical management of hospitalized cardiovascular patients. It will strengthen the student's abilities in cardiovascular history and physical examination and introduce and/or reinforce skills in electrocardiographic interpretations. It will introduce students to certain non-invasive cardiac techniques including echocardiography, phonocardiography, and nuclear cardiology. Students will have the opportunity to experience a balance of inpatient and outpatient exposure according to student preference and be expected to make rounds daily with the Cardiology Service (Staff and Interns). The student will be expected to work up approximately one patient daily and participate in the care of that patient to the point of discharge. The student will participate with the Staff assigned to EKG interpretation in the daily readings of EKG's. Lastly, the student will also have the opportunity to observe the performance and interpretation of non-invasive studies such as: echocardiography, nuclear cardiology, and systolic time intervals.

IMED 804 Dermatology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to provide a broad overview of the clinical presentation and management of common Dermatologic conditions seen in a clinic. An opportunity for self-study is provided as well. In addition, students will have the chance to accurately describe skin lesions. Diagnosis and treatment of common skin lesions, including papulosquamous diseases, vesiculobullous diseases, benign and malignant growths of the skin, drug reactions, sexually transmitted diseases of the skin, acne, bacterial, fungal, and viral infections of the skin, urticaria, skin signs of systemic diseases and recognition of life-threatening skin diseases. The student will appropriately perform and utilize diagnostic and surgical techniques such as microscopic examination of cutaneous preparations, biopsies, curettage, cryosurgery, and electrosurgery.

IMED 805 Allergy and Clinical Immunology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

In general, students will learn to identify, diagnose and treat common allergic and immunologic disorders: rhinosinusitis, asthma, atopic dermatitis, urticarial, angioedema, immunodeficiency states and insect, food, and drug allergy. The course will review allergic/allergic dermatology conditions and immunological deficiencies seen in private practice. The faculty will give regular feedback on their patient presentations. The student will develop an understanding of the indications and methods of allergy skin testing, office spirometry, and laboratory tests used in diagnosing allergic and immunologic diseases. Additionally, the student will develop a working knowledge of basic immunology concepts as they pertain to clinical care.

IMED 806 Clinical Infectious Disease**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will teach the student a logical approach to the diagnosis and management of patients suspected of having an infectious disease through direct participation in the consultative infectious diseases service of St. Joseph Hospital and College Station Medical Center as well as participation in the management of outpatient consults and outpatient primary care patient's clinic visits. The elective will discuss the use of ancillary radiological technology for the diagnosis and management of infectious diseases; establish a basic understanding of microbiological techniques as well as other laboratory techniques including pathology surgical specimens, in the diagnosis of infectious diseases through rounds in the clinical pathology laboratory of both hospitals. The elective will also discuss principles of antimicrobial therapy, including antibacterial, antifungal and antiviral, in the treatment of infectious diseases. Lastly, the elective will discuss principles regarding the interaction between consulting and consultant physicians including proper communication, hierarchy of physicians in the decision-making process, confidentiality issues, and conflict resolution.

IMED 807 Gastroenterology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will offer daily experience with a practicing gastroenterologist including office practice, inpatient rounds, and procedures. Goals include education in basic gastroenterology as well as allowing the student to experience the daily activities of a busy gastroenterology practice. The course will introduce the student to subspecialty consulting, with special focus on working cooperatively with primary care physicians and other subspecialists for the benefit of the patient. Hours are typically Monday-Friday 0700-1800. There is no night or weekend call.

IMED 808 Physical Medicine and Rehabilitation**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will allow fourth year medical students to familiarize themselves with the specialty of Physical Medicine and Rehabilitation if they are considering it as a possible career specialty. It will familiarize fourth year medical students with an inpatient and outpatient PM&R program and the treatment of complex neuromuscular and musculoskeletal problems. In addition, it will familiarize the student with a concept of interdisciplinary teams, and to help understand the appropriate and cost effective use of allied health therapies. Lastly, it will familiarize the student with the allied therapies including physical, occupational, speech and recreational therapy, prosthetics and orthotics.

IMED 810 Neurology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course provides a broad exposure to outpatient clinical neurology. It is primarily targeted to 4th year students considering a career in neurology, but may also be appropriate for students in 3rd year with an interest in neurology. Students should develop refinements of their neurologic examination skills and learn much regarding the clinical management of neurologic disease.

IMED 811 Internal Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The acting internship at Baylor University Medical Center at Dallas is a 4-week rotation that will provide fourth year medical students with the opportunity to function as an "acting intern" in Internal Medicine on a general medicine service with supervision by senior residents and faculty. It will provide an opportunity for medical students to gain a better experience in Internal Medicine if they are considering Internal Medicine or primary care as a possible career.

IMED 812 Physical Medicine and Rehabilitation**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to expose the student to various aspects of physical medicine and rehabilitation. The elective can be tailored according to the student's interests. Students work with attending physicians and residents while delivering patient care in both the inpatient and outpatient setting. Exposure to the rehabilitative care of patients with stroke, spinal cord injury, brain injury, amputation, neuromuscular diseases, and musculoskeletal problems will be available. Sub-specialty PM&R areas such as electrodiagnostics and pediatric rehabilitation may be accommodated for students who express interests in such areas. Students take part in various weekly didactic sessions such as Journal Club and Grand Rounds. No call is required.

IMED 813 Physical Medicine and Rehabilitation**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to expose the student to various aspects of physical medicine and rehabilitation. The elective can be tailored according to the student's interests. Students work with attending physicians and residents while delivering patient care in both the inpatient and outpatient setting. Exposure to the rehabilitative care of patients with stroke, spinal cord injury, brain injury, amputation, neuromuscular diseases, and musculoskeletal problems will be available. Sub-specialty PM&R areas such as electrodiagnostics and pediatric rehabilitation may be accommodated for students who express interests in such areas. Students take part in various weekly didactic sessions such as Journal Club and Grand Rounds. No call is required.

IMED 814 Hematology and Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Students will be a member of a team participating in the provision of comprehensive subspecialty consultations for inpatients and outpatients with a wide variety of blood and neoplastic diseases. Students must demonstrate knowledge about established biomedical and clinical sciences and the application of this knowledge to patient care. There are no examinations. Evaluation will be based on achievement of the stated objectives of the course as assessed by the attending physician to whom the student is assigned and the Program Director. Similarly, evaluation of the elective by the student will be requested.

IMED 815 Clinical Infectious Diseases**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will offer a logical approach to the diagnosis and management of patients suspected of having an infectious disease through direct participation in the consultative infectious diseases service as well as participation in the management of outpatient consults and outpatient primary care patients' clinic visits. The student will become familiar with the use of ancillary radiological technology for the diagnosis and management of infectious diseases. The course will establish a basic understanding of microbiological techniques, as well as other laboratory techniques including pathology surgical specimens, in the diagnosis of infectious diseases through rounds in the clinical pathology laboratory. Principles of antimicrobial therapy, including antibacterial, antifungal, antiparasitic, and antiviral therapeutics, in the treatment of infectious diseases will be introduced. Additionally, principles regarding the interaction between consulting and consultant physicians including proper communication, hierarchy of physicians in the decision-making process, confidentiality issues and conflict resolution will be presented.

IMED 816 Clinical Nephrology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will provide an overview of the practical clinical application of basic principles of renal physiology. Methods of instruction will include a didactic and clinical component. The didactic component includes the following regularly scheduled conferences: Medicine (general) Noon Conferences held Monday-Thursday; Internal Medical Grand Rounds, 8 a.m. every Tuesday; Nephrology Fellow Teaching Conference every Wednesday at 4:00, and Nephrology Journal Club held every Friday at 11:00 a.m. The clinical component consists of students performing the initial renal consultation, presenting the consult to the attending physician, and following the patient on a daily basis. The students are supervised by the members of the Nephrology Division at Baylor. Schedule is set by the attending physician. The student is accountable to the one member of the Nephrology Division to whom he/she is assigned. Students will be responsible for synthesizing data, formulating plans of action, and following patients with acute and chronic renal failure, fluid and electrolyte abnormalities and renal pathology.

IMED 817 Dermatology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to provide a broad overview of the clinical presentation and management of common Dermatologic conditions seen in a large group practice. Opportunity for self-study is provided as well. Housing is not provided and there is no required night call.

IMED 818 Allergy/Clinical Immunology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

In general, students will learn to identify, diagnose and treat common allergic and immunologic disorders: rhinosinusitis, asthma, atopic dermatitis, urticaria, angioedema, immunodeficiency states and insect, food, and drug allergy. The course will review allergic/allergic dermatology conditions and immunological deficiencies seen in private practice. The faculty will give regular feedback on their patient presentations. The student will develop an understanding of the indications and methods of allergy skin testing, office spirometry, and laboratory tests used in diagnosing allergic and immunologic diseases. Additionally, the student will develop a working knowledge of basic immunology concepts as they pertain to clinical care.

IMED 819 Bone Marrow Transplant**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The BUMC Marrow Transplant Program is one of the largest transplant groups in the country offering a rich experience in the field. The students will be exposed to a broad clinical overview of hematologic malignancy with an emphasis on bone marrow transplant. Students will round with the transplant team in the hospital and in the clinic. There will be a focus on the indications for transplant, complications of self and donor transplantation, and long term impact on Immunity in terms of host defense, auto/alloimmunity (graft versus host disease), and in terms of preventing or treating relapse. This will likely be best for those interested in medical oncology and hematologic malignancies. Two- to four-week rotations suggested but there would be flexibility in the time frame. This will be principally a clinical rotation with a strong emphasis on the care of the marrow transplant patient.

IMED 820 Cardiology Imaging**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will instruct students in the common and appropriate indications for echocardiography, cardiac/coronary CT angiography, and what each of these tests can provide for the evaluation of cardiac disorders.

IMED 821 Clinical Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will allow a 4th year student to work directly with an attending for a 2- or 4-week rotation. No specific call will be mandated, although students are allowed to be on call with their attending (attending dependent). Patients will be evaluated and admitted by the student/attending, as a part of their daily activities. Patients will be seen in different settings including the ED, office setting, and in-hospital, depending on the attending. Different levels of acuity patients are expected to be seen, from admissions with heart failure to STEMI patients who are going acutely to the catheterization lab. The student will attend cardiology conferences (as available, depending on location within the Baylor System as there are various locations for clinical cardiology) with the attending in addition to rounds.

IMED 823 HIV Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Students will be under the direct supervision of an attending physician on staff at Baylor University Medical Center at Dallas. Students will participate, through direct observation and through independent history-taking and physical examination, in the care of patients living with HIV/AIDS that are chronically managed by the attending physicians.

IMED 824 Neurology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This is a 2- to 4-week elective in clinical neurology. It will consist of a mandatory 2 weeks of inpatient neurology care and an additional elective 2 weeks of outpatient neurology in various clinics (including child neurology). The main goal of the rotation is to learn basic principles of Neurology that are necessary to the non-neurologist, while demonstrating conscientious and responsible behaviors pertaining to patient care.

IMED 825 Palliative Medicine and End-of-Life Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Faculty will strive to provide basic information on interdisciplinary approach to palliative and end-of-life care. This course will teach skills needed to improve communication with patients with chronic or terminal diseases and appropriate methods of delivering bad news. The student will be provided basic information on pain assessment and management. The course will demonstrate comprehensive nature of end-of-life care, the distinctive nature of its patient care model, and its significant place in today's healthcare arena.

IMED 827 Traditional Pulmonary Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to expose the student to a pulmonary consultative experience. The student will rotate and see pulmonary consultations at Baylor University Medical Center and in a doctor's private office. Thus, the student will be exposed to patients with COPD, dyspnea, interstitial lung disease, pleural effusions, thromboembolic disease, and lung nodules, masses, and cancer. The student will be able to participate in bronchoscopies, thoracentesis, and pulmonary function testing. The objectives of the rotation are: 1. to teach interpretation of pulmonary function testing; 2. to teach interpretation of chest x-rays and CT scans; and 3. to be able to appropriately address and understand the evaluation and management of dyspnea; airway diseases such as asthma, COPD, and bronchitis; pleural effusions; lung masses; thromboembolic diseases; and interstitial diseases (pulmonary fibrosis). The student will also see some in-patient consultations in the surgical intensive care units.

IMED 828 Advanced Lung Disease I**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to expose the student to patients with advanced and unusual lung diseases. The student will be expected to learn how to interpret chest x-rays and the different types of CT scans of the chest, have a better understanding of pulmonary physiology and to learn how to interpret pulmonary function testing, attend the clinics, see, and treat patients with COPD, interstitial lung diseases, pulmonary hypertension, cystic fibrosis, and who have undergone or are being referred for lung transplantation. The students will participate in bronchoscopies. During this part of the rotation, the student will see patients both in the clinics and in the hospital. The second half of the rotation will be spent in the Martha Foster Lung Center. This aspect of the rotation will focus on treatment of patients with asthma and COPD and on pulmonary rehabilitation.

IMED 829 Advanced Lung Disease II**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to expose the student to patients with advanced and unusual lung diseases. The student will be expected to learn how to interpret chest x-rays and the different types of CT scans of the chest, have a better understanding of pulmonary physiology and to learn how to interpret pulmonary function testing, attend the clinics with Dr Rosenblatt, see, and treat patients with COPD, interstitial lung diseases, pulmonary hypertension, cystic fibrosis, and who have undergone or are being referred for lung transplantation. The students will participate in bronchoscopies. During this part of the rotation, the student will see patients both in the clinics and in the hospital. The objectives of the rotation are: 1. To teach the student how to interpret and appropriately order chest x-rays; 2. to teach the students about the different types of CT scans and how to interpret them; 3. to teach the student how to interpret pulmonary function testing including arterial blood gases, spirometry, plethysmography, and diffusion; 4. to learn how to diagnose and treat the various interstitial lung diseases; 5. to learn about the presentation and management of adult patients with Cystic Fibrosis; 6. to learn about the indications and evaluation of patients referred for lung transplantation; 7. to learn about the post operative and long term follow-up of lung transplant patients which will include a focus on infectious disease and immunosuppressive medications; 8. to learn about pulmonary hypertension; and 9. to learn about the evaluation and treatment of patients with asthma, COPD, and bronchiectasis.

IMED 830 Rheumatology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Identify, diagnose, and treat common rheumatologic disorders; rheumatoid arthritis, musculoskeletal exam techniques, lupus, crystalline arthropathies, spondyloarthropathies, vasculitis, osteoarthritis, soft tissue disorders and myopathies. The student will understand the risks and benefits of drugs used to treat rheumatologic diseases. The student will become familiar with the indications and methods of joint aspiration and injection, soft tissue injections, and serologic tests for rheumatologic disorders. Basic concepts in immunology and pharmacology as they pertain to clinical care will also be taught.

IMED 831 Medical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The Medical Intensive Care Unit will guide the student through a systematic approach to the critically ill patient and impart an appreciation for the dynamic multi-organ system interrelationships in critical care. Senior medical students will be taught an evidence based medical approach to the frequently encountered medical illnesses requiring critical care intervention. Additionally, the students should anticipate fostering of their ethical compass as it relates to complex medical dilemmas involving life and death issues.

IMED 832 Medical-Surgical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The Medical-Surgical Intensive Care Unit will guide the student through a systematic approach to the critically ill patient and impart an appreciation of the dynamic multi-organ system interrelationships in critical care and the multidisciplinary management of those patients. Senior medical students will be taught an evidence-based medical approach to the frequently encountered medical illnesses requiring surgical and medical critical care intervention to include ventilatory management, hemodynamic monitoring and management, as well as nutritional, pharmacologic, and rehabilitative efforts. In addition, the experience will foster setting of the students' ethical compass as it relates to complex medical, ethical dilemmas and life and death issues. There will be no night call but students may be asked to work weekend shifts.

IMED 833 Clinical Endocrinology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The endocrinology experience will include all levels of care (1-3 degree), primary and secondary patients along with several outpatients per day with a variety of endocrine disease. The faculty will introduce the student to endocrine evaluation based upon knowledge of clinical physiology and pharmacologic manipulation. The faculty will familiarize the student with the management of diabetes, thyroid disease, osteoporosis and lipid disorders in patients.

IMED 834 Clinical Gastroenterology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Daily experience with a practicing gastroenterologist including office practice, inpatient rounds, procedures and educational conferences. Goals include education in basic gastroenterology and for the student to gain insight into what a gastroenterology practice is like. This includes the concept of being a subspecialist consultant and to work cooperatively with other subspecialists for the benefit of the patient. Hours are typical Monday-Friday starting at 0700 each day and finishing before 1800 each day. There is no night or weekend call. In addition to the usual Internal Medicine noon conferences, students attend a number of GI conferences weekly and interact with residents and fellows on the service.

IMED 835 Infectious Disease**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. In-depth clinical experience in the diagnosis, treatment and prevention of infectious diseases; teach the fundamental infectious diseases concepts during the rotations in our in-patient consult services and our outpatient clinics; and also during our regularly scheduled academic meetings, provide regular feedback to the students on their history and physical, case presentation, professionalism and interpersonal skills.

IMED 836 Benign Hematology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Provide structured rounds on inpatients service; expose students to out-patients with a variety of benign hematological conditions: hypercoagulability, thrombosis, bleeding, and abnormal platelets, red blood cells, and white blood cells; provide didactic sessions at least weekly; and challenge students to master and teach on focused topic.

IMED 837 Cardiology Imaging**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at the Methodist Hospital. Hospital management of common cardiology conditions such as atrial fibrillation, heart failure, pericarditis, acute coronary syndromes, and recovery from open heart surgery. Interpret ECGs with the student; and teach an evidence-based approach to the evaluation and management of common cardiology disorders, including the appropriate use of testing and invasive procedures.

IMED 838 Inpatient General Internal Medicine Consult Service**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Inpatient management of common medical problems; management strategies for patients requiring urgent care; improve students' skills in developing work-up and management strategies for common medical diagnosis; and provide opportunities to experience the role of an inpatient GIM consultant to a diverse group of specialists.

IMED 839 Clinical Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Unique learning experience in general cardiology and cardiovascular complications of cancer treatments; teach clinical cardiology concepts during clinic, inpatient rounds, and regularly scheduled didactic departmental and multidisciplinary conference; and provide regular feedback to student on patient presentations.

IMED 840 Clinical Endocrinology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Broad clinical experience in endocrinology and endocrine neoplasias; teach clinical endocrinology concepts during clinic, inpatient rounds, and regularly scheduled didactic, multidisciplinary and research conferences; and provide regular feedback to student on patient presentations.

IMED 841 Clinical Dermatology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Broad clinical experience in dermatology; teach clinical dermatology concepts in the outpatient dermatology clinic and regularly scheduled didactic conferences; and provide exposure to dermatopathology and dermatologic surgery.

IMED 842 Immunology Research Elementary Mechanisms of Inflammation**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The faculty will strive to create a stimulating educational environment and provide opportunities to conduct research based on the scientific method; supervise the student's performance of basic laboratory techniques; meet regularly with the student to discuss and critique the progress of their research project; and encourage the student to present at scientific meetings.

IMED 843 Cardiology Outpatient**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at the Methodist Hospital. Outpatient management of common cardiovascular disorders such as hypertension, perlipidemias, heart failure, chronic atrial fibrillation, angina pectoris and valvular disorders; and interpret ECGs with the student.

IMED 844 Cardiology Inpatient**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at the Methodist Hospital. Common and appropriate indications for echocardiography, nuclear cardiology, cardiac MRI, and cardiac/coronary CT angiography, and what each of these tests can provide to the evaluation of cardiac disorders.

IMED 845 Gastroenterology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. A unique opportunity for medical students to see patients referred with specific issues related to gastroenterology and gastrointestinal cancer; working one-on-one with faculty in the outpatient clinic, hospital and endoscopy unit will provide close interaction between students, fellows and staff in an environment that nurtures teaching; provide defined educational experiences that will impact on providing insightful consultation for a very wide range of gastrointestinal problems, the effective management and appropriate use of endoscopic procedures; and provide students with the opportunity to evaluate and manage outpatients under close faculty supervision; perform consultative evaluations on a limited number of inpatients under close faculty supervision; and observe both diagnostic and therapeutic endoscopic procedures such as used for tumor ablation, control of bleeding and screen for colon cancer.

IMED 846 Nephrology Consult Service**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Broad clinical experience in nephrology; teach clinical nephrology concepts in the hospital, clinic, and regularly scheduled didactic conferences; and give regular feedback to students on their patient presentations.

IMED 847 Pulmonary Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Provide fourth year medical students the opportunity to be a part of the inpatient consult service for pulmonary issues and complications related to cancer and cancer-related treatment, under close supervision by a faculty member; develop skills in differential diagnosis, as well as guide them in identifying appropriate diagnostic and therapeutic studies; enhance physical exam skills, especially related to the pulmonary system; encourage evaluation and interpretation of pulmonary function tests, chest radiograph and computed tomography of the lungs; and allow observation of common pulmonary procedures, including thoracentesis and bronchoscopy.

IMED 848 Acting Internship/Hospitalist General Internal Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Inpatient management of common medical problems; management strategies for patients requiring urgent care; improve students' skills in developing work-up and management strategies for common medical diagnosis; and provide opportunities to experience the role of an inpatient GIM consultant to a diverse group of specialists.

IMED 849 Acting Internship in General Internal Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at the Methodist Hospital. This is a 4-week acting internship elective in Internal Medicine at The Methodist Hospital during which the student will work under the supervision of a senior resident and attending physician. The student will be required to take night calls (until 11 pm) with the resident team every 4th night. The student will be expected to function at the level of an intern and will have primary responsibility for the patients he/she admits to the Internal Medicine service. Housing is the responsibility of the student.

IMED 850 Ambulatory General Medicine Elective**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at MD Anderson. Ambulatory management of common medical problems; work-up strategies to patients presenting with suspicion of cancer; risk stratification strategies for cancer patients undergoing surgical procedures; management strategies to cancer survivors; improve students' skills in developing work-up and management strategies for common medical diagnosis in ambulatory setting; and opportunities to experience the role of an outpatient GIM consultant to a diverse group of specialists.

IMED 851 Neurology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at the Methodist Hospital. Provide the student with an opportunity to see patients with neurological problems under the supervision of various neurologists and neurology residents; provide feedback on histories, physicals, and case presentations; and encourage independent study of neurological disorders and pathophysiology.

IMED 853 Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at Austin Heart. Improve student clinical skills in obtaining a pertinent cardiovascular history and performing physical examination including identification of cardiac murmurs by auscultation. Increase knowledge of path physiology of cardiac illnesses. Improve knowledge about management of cardiac problems, congestive heart failure, angina pectoris acute coronary syndrome, cardiac arrhythmias and emergencies. Improve student skills in identification of EKG abnormalities and arrhythmias. Introduction to non-invasive tests like cardiac stress tests, echocardiograms. Introduction to nuclear cardiology. Introduction to hemodynamics, cardiac patients in ICU. Introduction to evidence based approach to medicine practiced in care of cardiac patients.

IMED 854 Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at Texas Cardiovascular. Improve student clinical skills in obtaining a pertinent cardiovascular history and performing physical examination including identification of cardiac murmurs by auscultation. Increase knowledge of path physiology of cardiac illnesses. Improve knowledge about management of cardiac problems, congestive heart failure, angina pectoris acute coronary syndrome, cardiac arrhythmias and emergencies. Improve student skills in identification of EKG abnormalities and arrhythmias. Introduction to non-invasive tests like cardiac stress tests, echocardiograms. Introduction to nuclear cardiology. Introduction to hemodynamics, cardiac patients in ICU. Introduction to evidence based approach to medicine practiced in care of cardiac patients.

IMED 855 Clinical Rheumatology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The four-week elective is designed to provide a broad clinical experience in Clinical Rheumatology. First contact experience will be provided in the outpatient clinical setting at Scott and White Healthcare - Round Rock. Housing is not provided. No night call is required.

IMED 856 Hematology and Medical Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The elective is designed to give the student understanding and educational experience in the evaluation and clinical management of patients with hematologic and non-hematologic malignancies. Housing is not provided. No night call is required.

IMED 857 Hematology and Medical Oncology – Outpatient
Credits 1.25 to 10. 1.25 to 10 Other Hours.

The elective is designed to give the student understanding and educational experience in the evaluation and clinical management of patients with hematologic and non-hematologic malignancies. Housing is not provided. No night call is required.

IMED 858 Neurology

Credits 1.25 to 10. 1.25 to 10 Other Hours.

The two- or four-week elective is designed to teach the principles and skills underlying the recognition and management of neurological diseases that a general practitioner is most likely to encounter in practice. The student will attend outpatient clinic throughout the elective and will be assigned new patients for evaluation as well as previously assigned patients for follow-up. Housing is not provided. No night call is required.

IMED 859 Intensive and Critical Care

Credits 1.25 to 10. 1.25 to 10 Other Hours.

The four-week rotation is designed to impress upon the student the need for a comprehensive problem oriented approach to the critically ill patient and to help the student to understand and manage complex medical problems of the critically ill patient. The faculty will strive to teach the student a logical evidence-based approach to the care of critically ill patients and provide the student an in-depth exposure to a wide range of medical diseases encountered in the intensive care setting. Faculty will strive to assist the student in basic knowledge and abilities of ICU procedures. The student will follow their own group of patients and work directly with the critical care faculty member.

IMED 860 Adult and Pediatric Allergy and Immunology Outpatient Clinic
Credits 1.25 to 10. 1.25 to 10 Other Hours.

This is a four-week elective in allergy and immunology that will provide experience in managing common adult and pediatric allergy and immunology ambulatory illness. It will introduce student to uncommon allergic diseases and illustrate broader aspects of adult and pediatric care, as it relates to the care of patient with chronic allergic conditions. The elective will encourage student to develop skills in carefully evaluating patient with allergic or immunological problems and introduce them to an ambulatory health care system dealing with patients who have chronic illnesses and require chronic management.

IMED 861 General Internal Medicine Acting Internship

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Strengthen and refine student's skills in taking historic and performing physical examinations; assist students in developing better capabilities in arriving at differential diagnoses and ordering diagnostic testing; guide students in making therapeutic decisions; give students responsibility for patient management under faculty supervision; and allow students to perform certain diagnostic procedures under supervision on their patients when indicated.

IMED 862 Preventative Medicine

Credits 1.25 to 10. 1.25 to 10 Other Hours.

The elective will introduce the student to: experience the roles and responsibilities of a preventative medicine physician; evidence based preventative services in the public health setting and in the community; expose the student to the core functions and essential services of a local public health agency including the programmatic and practices examples of each; explore the competencies inherent in preventative medicine residencies, the scope and content of the Masters of Public Health Degree and opportunities for scholarly research in prevention.

IMED 863 Community Based Geriatric Medicine

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Increase student awareness of the biopsychosocial factors which characterize the uniqueness of the elderly, understand normal aging processes and differentiate this from disease. Improve student capacity for effective assessment and treatment of the ill elderly and recognize the unique aspects of drug therapy and drug interaction in the elderly. Exposure to the multidisciplinary team concept to enhance effectiveness in working with therapists, social workers, dieticians, nurses, nurse practitioners, etc. Examine negative attitudes toward aging and the aged and the implications of these attitudes for medical care. Provide information about proper methods for preventing unnecessary illness in the elderly. Exposure to extended care facilities, community home services, and alternatives to institutional care which are available to elderly citizens.

IMED 864 Gastroenterology Hospital Service

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Reinforce the clinical diagnostic skills obtained by the student during his third-year clerkship in medicine. Introduce the student to the specialized diagnostic procedures relating to gastrointestinal disorders with emphasis on their indications and interpretations. Familiarize the student with the management of some of the more commonly encountered gastrointestinal disorders.

IMED 865 Clinical Gastroenterology, Hepatology, and Nutrition

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This elective will reinforce the clinical diagnostic skills obtained by the student during his third-year clerkship in Medicine; introduce the student to the specialized diagnostic procedures relating to gastrointestinal disorders with emphasis on their indications and interpretations, limitations, and risks; and familiarize the student with the management of some of the more commonly encountered gastrointestinal disorders.

IMED 866 Clinical Nutrition

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This elective will provide an introduction to clinical malnutrition in the adult patient with emphasis on the clinical syndromes of kwashiorkor and marasmus. An understanding of alterations in nutrition which occur as a result of adult illnesses including the clinical recognition and management of resulting disorders of nutrition. A familiarity to the student of the proper evaluation and utilization of specific lab tests in the diagnosis of malnutrition in the hospitalized adult patient. A familiarity to the students of the indications and usage of enteral nutrition in the support of the hospitalized adult patient. A familiarity to the student of the utilization of peripheral protein sparing alimentation in the adult hospitalized patient. A familiarity to the student of proper utilization of central alimentation (Total Parenteral Nutrition) in the hospitalized adult patient.

IMED 867 Pulmonary and Critical Care Medicine

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This elective will strive to: guide the student through a systematic approach to the critically ill patient and impart an appreciation of the dynamic multi-organ system interrelationships in critical care; Teach the student an evidence-based medical approach to the frequently encountered medical illnesses requiring critical care intervention; Teach the student an appropriate approach and initial diagnostic evaluation of the more common pulmonary diseases encountered in internal medicine; Foster the students ethical compass as it relates to complex medical ethical dilemmas and life and death issues.

IMED 868 Clinical Allergy**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will provide experience in the diagnosis and management of allergic and related non allergic diseases commonly encountered in primary medical practice and uncommon allergic and immunologic diseases referred to the faculty.

IMED 869 Hematology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will introduce the student to the spectrum of hematologic problems seen in a primary care practice; reinforce basic concepts of pathophysiology, clinical evaluation, and management of common hematologic problems; strengthen the student's understanding of peripheral blood and bone marrow morphology; strengthen the student's understanding of basic coagulation testing as it applies to patients with hematologic and non-hematologic disease; and acquaint the student with the indications and proper technique for commonly used diagnostic procedures in patients with hematologic problems.

IMED 870 Geriatric Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to give fourth year medical students the opportunity to practice community based geriatric medicine. The students will examine and evaluate patients in their home environments within senior living communities as opposed to hospital based care.

This approach provides a rich opportunity to put into practice the concepts of multi-faceted geriatric assessment taught during the 3rd year ambulatory internal medicine block. The students will also have case-based interactive learning sessions, which will focus on integrating pharmacology and patho-physiology as they apply to the aging population. This elective will cover common geriatric syndromes such as falls, incontinence, atypical presentation of disease, failure to thrive, elder abuse, pressure ulcers, end of life care, gait instability and debility. Transportation to distant clinical sites is available via carpool.

IMED 871 Ambulatory General Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Strengthen and refine a student's skill set focusing on taking an accurate patient history, performing physical exams, and developing a differential diagnosis. The faculty will assist the student in developing a plan of care including ordering diagnostic imaging and laboratory as well as providing insight into the therapeutic decision making. The students will be given responsibility for patient management under faculty supervision. The students will be allowed to perform appropriate diagnostic procedures under supervision on their patients when indicated.

IMED 872 Gastroenterology Clinic**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Introduce the student to the spectrum of diseases and problems seen in the outpatient clinical practice of gastroenterology. Reinforce basic concepts regarding the pathophysiology, clinical evaluation and management of the more common problems seen in gastroenterology and hepatology. Acquaint the student with the GI investigative procedures their indications, practice and interpretation. Familiarize the student with the indications for and interpretation and clinical correlation of GI radiological techniques.

IMED 873 Clinical Pulmonology (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Improve skills in obtaining a respiratory history and performing a physical examination of the chest; strengthen ability to interpret radiographs of the chest, pulmonary function tests, and arterial blood gas results; increase knowledge of pulmonary disease and the pathophysiology of respiratory disorders; improve skills in managing patients with common pulmonary disease; and provide opportunities for observing endobronchial abnormalities at bronchoscopy.

IMED 874 Private Service Internal Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

One-on-one mentoring and teaching for fourth year students. Promote autonomous decision making within appropriate confines of a teaching service. Further develop student's patient management skills. Promote increased appreciation of the multiple aspects of the practice of Internal Medicine.

IMED 875 Neurology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Principles and skills underlying the recognition and management of neurologic diseases that a general practitioner is most likely to encounter in practice.

IMED 876 Medical Intensive Care Unit (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Provide fourth year medical students with the opportunity to function as an "acting intern" in the Coronary and Medical Intensive Care Unit (CMICU) with the supervision by senior residents and faculty. Assist students in developing better capabilities in arriving at differential diagnoses and ordering diagnostic tests. Guide students in learning patient monitoring and life-support equipment used in the critical care setting. Allow the students to perform certain diagnostic procedures on their patients when indicated.

IMED 877 Clinical Pharmacology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Introduce the principles of pharmacotherapy, including therapeutic drug monitoring, as these principles apply to the clinical setting. Enhance the student's ability to apply pharmacologic principles to clinical medicine. Introduce the student to the resource materials available for information on drugs and drug therapy. Familiarize the student with the principles of drug absorption, distribution, metabolism, and elimination as they apply to patients with different diseases and of varying age groups. Expand the student's knowledge of principles of antimicrobial therapy.

IMED 878 Clinical Cardiology and Electro Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will introduce the students to the clinical management of hospitalized cardiovascular patients; strengthen the student's abilities in cardiovascular history and physical examination; introduce and/or reinforce skills in electrocardiographic interpretations; and introduce students to certain noninvasive cardiac techniques including echocardiography, phonocardiography, and nuclear cardiology.

IMED 879 ICU Clinical Cardiology and Electrocardiography (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Improve student skills in obtaining a pertinent cardiovascular history and performing physical examination including identification of cardiac murmurs by auscultation. Increase knowledge of pathophysiology of cardiac illnesses. Improve knowledge about management of cardiac problems, congestive heart failure, angina pectoris, acute coronary syndrome, cardiac arrhythmias and emergencies. Improve student skills in identification of EKG abnormalities and arrhythmias. Introduce to non-invasive tests like cardiac stress tests, echocardiograms. Introduce to nuclear cardiology. Introduce to hemodynamics, cardiac outpatients in ICU. Introduce to evidence based approach to medicine practiced in care of cardiac patients.

IMED 880 Medical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will impress upon the student the need for a comprehensive problem oriented approach to the critically ill patient, and strive to help the student to understand and manage complex medical problems of the critically ill patient. Teach the student a logical evidence-based approach to the care of the critically ill patient and provide the student an in-depth exposure to a wide range of medical diseases encountered in Internal Medicine. Assist the fourth year student in learning basic knowledge and abilities of ICU procedures. Insure that this rotation meets the requirements for acting internship. The student will maintain their own group of patients and work directly with the critical care faculty member as well as an upper level resident or pulmonology fellow. The student will take in-house call with the team at least once a week.

IMED 881 Clinical Endocrinology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Introduce the student to endocrine evaluation based upon knowledge of clinical physiology and pharmacologic manipulation. Familiarize the student with the management of diabetes, thyroid disease, osteoporosis and lipid disorders in patients.

IMED 882 Clinical Endocrinology with Primary Focus on Diabetes (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Disease and pathophysiology of Diabetes Type, 1 DM and Type 2 DM; recognition of disease and its complications and treatments; and also include other endocrine related disorders, including but not limited to thyroid, pituitary, adrenal, parathyroid, other hormones, electrolyte and water disturbances.

IMED 883 Dermatology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective is designed to provide a broad overview of the clinical presentation and management of common dermatologic conditions seen in a large group practice. Opportunity for self-study is provided as well. Housing is not provided and there is no required night call.

IMED 884 Academic Medicine Clinic (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

General principles of primary care in a prepaid setting, with emphasis on preventive medicine and outpatient diagnosis and therapy; out-patient management of some of the most common problems in adult medicine; and broad range of activity in an outpatient clinic, operating under the managed care paradigm, so as to help the student with a career choice.

IMED 885 Neurology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The 2- to 4-week elective is designed to teach the principles and skills underlying the recognition and management of neurological diseases that a general practitioner is most likely to encounter in practice. Housing is not provided. No night call is required.

IMED 886 Inpatient Palliative Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Rotation that will teach communication skills, expert symptom management and interdisciplinary team work with a social worker and chaplain on an inpatient Palliative Care Service. Regardless of our eventual area of expertise, each of us will take care of patients with major symptoms of disease and the associated emotional and spiritual reactions. Research has shown that although we have accomplished major technical expertise over the last few decades, until recently very little educational effort has been spent on communication skills, professionalism and aggressive symptom management. This course will be helpful for all those that deal with sensitive patient and family issues, regardless of specialty. It will also encourage the student to care for themselves that they may have the energy and strength to care for others.

IMED 887 Clinical Infectious Disease (Inpatient Service)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Familiarize the clinical clerk with the presentation, differential diagnosis, and management of commonly encountered infections disease; familiarize the clinical clerk with his responsibilities as a physician in the public health system of Texas; acquaint the clinical clerk with the practical aspects of antimicrobial agents commonly used; and provide experience in microbiologic techniques useful for the practicing physician.

IMED 888 Clinical Infectious Diseases (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Acquire skills in diagnosis and treatment of adult infectious diseases, including both acute and chronic community acquired infections as well as nosocomial infections; and develop experience and education in the proper use of anti-infective agents.

IMED 889 Clinical Nephrology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Reinforce core material from the Nephrology section of the Introduction to Medicine course; provide clinical correlation and patient management experience in renal disease; familiarize the student with laboratory investigative procedures utilized in the diagnosis of renal disease; and strengthen the students' basic history physical performance skills.

IMED 890 Subinternship in Medical Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Basic principles of non-surgical acute hospital care; experience in the day-to-day management of severely ill hospitalized patients with malignant diseases at all stages, both as a primary care giver and as a consultant, biologic therapy, immunotherapy and supportive care; initiation and proper use of clinical research protocols in medical oncology; basic principles of symptom control in patients with all stages of malignant disease; basic principles of a multidisciplinary approach to patients with cancer, including interaction with other medical specialists and support services; and strengthen the student's ability to interact with patients and their families at a time of health crisis.

IMED 891 Pulmonary and Sleep Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This elective will provide the student with exposure to the diagnosis and treatment of a wide variety of pulmonary diseases under the guidance of the attending staff and fellows. Familiarize the student with the various pulmonary function tests used in the clinical practice of pulmonary medicine. Introduce the student to various special diagnostic procedures used in pulmonary medicine and sleep disorders medicine. Reinforce the pathophysiologic principles learned in the classroom and correlate them with special clinical problems. Introduce the student to and acquaint him/her with common sleep disorders and their diagnosis and treatment. Regularly review radiographic findings of patients seen and correlate them clinically.

IMED 892 General Internal Medicine Acting Internship (VA)**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Strengthen skills in taking histories and performing physical examinations; assist students in developing better capabilities in arriving at differential diagnoses and ordering diagnostic tests; guide students in making therapeutic decisions; give students responsibility for patient management under faculty supervision; allow students to perform certain diagnostic procedures under supervision on their patients when indicated.

IMED 893 Research in Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

An appreciation for research has high educational value in the development of physicians. The purpose of this elective will be to provide students an opportunity to explore research processes, planning and execution particularly within medicine. Students may or may not be involved in a research project at the commencement of the elective. Thus, the elective can provide assistance to students with an ongoing research project reach their project goals and can provide those interested in starting a research project the fundamentals to begin, carryout, and potentially complete a research project.

IMED 894 Medical Education/Simulation**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Introduce students to curriculum design, outcome measure implementation and learning styles. Present simulation opportunities for teaching, as well as train students to utilize simulation equipment/software (partial task trainers, SimMan, MicroSim). Instruct students on teaching methods and provide opportunities for students to employ teaching methods within the MS3 IM clerkship. Expose students to faculty development opportunities. Four-Week Elective: In addition to the expectations above: Familiarize students with concepts in research design, including carrying out a literature review, gathering and analyzing data, and writing for presentation (e.g., poster presentation.)

IMED 895 Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Management of acute cardiac emergencies with emphasis on coronary care; reinforce the student's skills in bedside evaluation and history taking of angina and clinical presentation of myocardial infarctions; familiarize the student with current techniques in management of acute myocardial infarction including the treatment of arrhythmias and congestive heart failure in the acute infarct setting; introduce the student to post myocardial infarction rehabilitation and education practices; and introduce the student to the care of postop CA bypass patients.

IMED 896 Internal Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Provide fourth year medical students with the opportunity to function as an "acting intern" in Internal Medicine on a general Medicine service with supervision by senior residents and faculty. Help prepare medical students for responsibilities and skills necessary during internship. Provide an opportunity for medical students to get a better experience in Internal Medicine if they are considering Internal Medicine or primary care as a possible career.

IMED 897 Critical Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at Austin Pulmonary Consultants. This elective will impress upon the student the need for a comprehensive problem oriented approach to the critically ill patient, and strive to help the student to understand and manage complex medical problems of the critically ill patient. Teach the student a logical evidence-based approach to the care of the critically ill patient and provide the student an in-depth exposure to a wide range of medical diseases encountered in Internal Medicine. Assist the fourth year student in learning basic knowledge and abilities of ICU procedures.

IMED 898 Ambulatory General Internal Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Strengthen and refine a students' skill set focusing on taking an accurate patient history, performing physical exams, and developing a differential diagnosis. The faculty will assist the student in developing a plan of care including ordering diagnostic imaging and laboratory as well as providing insight into the therapeutic decision making. The students will be given responsibility for patient management under faculty supervision. The students will be allowed to perform appropriate diagnostic procedures under supervision on their patients when indicated.

IMED 901 General Medicine Acting Internship**Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

The IMED AI is a four-week experience in the inpatient setting during which students assume the role of 'intern.' Students will be integrated into the service as a member of the team, participating in all aspects of patient management. The student will be expected to complete at least 40 hours per week on the service. Students will be expected to do after hours call overnight twice weekly and will work directly with attending at St. David's Medical Center-Georgetown. Housing is not provided for this elective. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.**IMED 902 Physical Medicine and Rehabilitation****Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

This elective will allow fourth year medical students to familiarize themselves with the specialty of physical medicine and rehabilitation if they are considering it as a possible career specialty. It will familiarize fourth year medical students with an inpatient and outpatient PM&R program and the treatment of complex neuromuscular and musculoskeletal problems. In addition, it will familiarize the student with a concept of interdisciplinary teams, and to help understand the appropriate and cost effective use of allied health therapies. Lastly, it will familiarize the student with the allied therapies including physical, occupational, speech and recreational therapy, prosthetics and orthotics. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.

IMED 903 Traditional Pulmonary Medicine**Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

This elective is designed to expose the student to a pulmonary consultative experience. The student will rotate at St. David's Georgetown Hospital and in a doctor's private office at Central Texas Pulmonary. Thus, the student will be exposed to patients with COPD, dyspnea, interstitial lung disease, pleural effusions, thromboembolic disease, and lung nodules, masses, and cancer. The student will be able to participate in bronchoscopies, thoracentesis, and pulmonary function testing. The objectives of the rotation are: (1) to teach interpretation of pulmonary function testing, (2) to teach interpretation of chest x-rays and CT scans, and (3) to be able to appropriately address and understand the evaluation and management of dyspnea; airway diseases such as asthma, COPD, and bronchitis; pleural effusions; lung masses; thromboembolic diseases; and interstitial diseases (pulmonary fibrosis). The student will also see some patient consultations in the surgical intensive care units. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.**IMED 904 Coronary Care Unit****Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

Improve student skills in obtaining a thorough history and performing a physical examination with particular emphasis on pertinent cardiovascular history as well as comprehensive examination of the cardiovascular system that encompasses the following five key areas: (1) general examination of the patient; (2) assessment of the venous pulse, both in normal and diseased states; (3) assessment of arterial pulse, both in normal and diseased states; (4) precordial examination; and (5) auscultation of the cardiovascular system, including identification of cardiac murmurs. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.**IMED 919 Adult Allergy and Immunology****Credits 1 to 15. 1 to 15 Other Hours.**

Two to four week elective in allergy and immunology; managing common adult and pediatric allergy and immunology ambulatory illness; introduction to uncommon allergic diseases and broader aspects of adult and pediatric care as it relates to the care of patients with chronic allergic conditions; encourages development of skills in carefully evaluation patients with allergic or immunological problems; introduction to an ambulatory health care system dealing with patients who have chronic illnesses and require chronic management.

Prerequisite: Admission to medical school.**IMED 985 Off Campus Student Initiated Elective****Credits 1.25 to 12. 1.25 to 12 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

IMED 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Internal Medicine in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

INTA - International Affairs

INTA 601 Leadership in International Affairs: Institutions, Organizations and People**Credits 3. 3 Lecture Hours.**

Provides the knowledge base for developing a deep understanding of the study of leadership and management and the role(s) of leaders in international affairs.

INTA 603 American Diplomacy**Credits 3. 3 Lecture Hours.**

Explores the use of diplomacy in American foreign policy during recent decades; description and assessment are undertaken of United States diplomatic efforts to pursue its vital interests and to respond to changing international conditions and challenges; specific regions or substantive issues may be highlighted in a given semester using a variety of learning strategies.

Prerequisite: Graduate classification.**INTA 604 Politics of the Contemporary Middle East****Credits 3. 3 Lecture Hours.**

Learn factors influencing the political course of the middle east, what makes the region seemingly "impervious" to worldwide trends, topics include regime types, influential political trends, the role of kinship, religion and tribe in opposition and regime politics, regional oil economy, democratic liberalization, growth of civil society.

Prerequisite: Graduate classification.**INTA 605 American Foreign Policy Since World War II****Credits 3. 3 Lecture Hours.**

An examination of American foreign policy from 1945 to the present; focus on decisions made by American elected and appointed officials at critical moments of the Cold War and after; theory provides a framework, but the focus is on practical matters that confronted decision-makers.

Prerequisite: Graduate classification.**INTA 606 International Politics in Theory and Practice****Credits 3. 3 Lecture Hours.**

The effects of international politics on the competing forces of global integration and disintegration are investigated and policy implications are considered, drawing upon theories of interstate politics.

Prerequisite: Admission to MPIA or approval of instructor.**INTA 608 Fundamentals of the Global Economy****Credits 3. 3 Lecture Hours.**

Examines three fundamental pillars of the global economy: international trade, international finance and foreign direct investment (FDI); appreciation for the complexities of the international environment from both theoretical and policy perspectives.

Prerequisite: Graduate classification.**INTA 609 International Law and its Application to Human Rights, Use of Force and U.S. Law****Credits 3. 3 Lecture Hours.**

Foundations of international law including treaties, custom, general principles, equity and Jus Cogens and the increasing application of these principles by U.S. courts and new International Tribunals; focuses specifically on these principles as applied to human rights, laws of war and nation state use of force since Nuremberg and the UN Charter through current events; reviews developing law in common areas such as the Law of the Sea, Atmosphere and Space.

Prerequisite: Graduate classification.

INTA 611 Authoritarianism and Political Elites in the Arab World**Credits 3. 3 Lecture Hours.**

Introduces the concept of political elite and linking it to the authoritarian state in the Arab world in an attempt to explain the lack of democracy in that part of the world.

INTA 612/PSAA 668 U.S. Law and Homeland Security**Credits 3. 3 Lecture Hours.**

Analyze the threat to the homeland as reflected in a number of pre and post 9/11 commission reports; master's level course intended for individuals preparing for professional careers in the conduct of international affairs.

Prerequisite: Graduate classification.**Cross Listing:** PSAA 668/INTA 612.**INTA 613 Diplomatic Negotiations: A U.S. Embassy Perspective****Credits 3. 3 Lecture Hours.**

Explore the role of a formal Presidential National Security Strategy, gain first-hand skills and practice in how an American Embassy functions to achieve national security objectives; master's level course intended for individuals preparing for professional careers in the conduct of international affairs.

INTA 615 Democratization as Foreign Policy**Credits 3. 3 Lecture Hours.**

Explores concept of democracy and its "requisites", focuses on "third wave" and possible "fourth wave" of democratization, attention to cases in Eastern and Southern Europe, Latin America, Middle East; addresses in-depth international dimension of democratization; war, institutional change, aid and the promotion of democracy; assessment of relationship between democracy and peace.

INTA 616 Economic Development in China**Credits 3. 3 Lecture Hours.**

Economic development in China introducing descriptive information of development strategies, institutional changes and policy effectiveness with respect to industrialization, economic growth income distribution and welfare at different historical stages.

INTA 617 Deterrence and Coercion**Credits 3. 3 Lecture Hours.**

Introduces deterrence and coercion as instruments of defense policy by applying them to historical and contemporary security problems.

INTA 618 Government and Homeland Security**Credits 3. 3 Lecture Hours.**

Focus on how government is structured to combat terrorism, essentially a course in federalism, with a concentration on issues related to homeland security; topics include governmental structure and jurisdiction, political, fiscal and administrative; master's level course intended for individuals preparing for professional careers in the conduct of international affairs.

INTA 620 International Security**Credits 3. 3 Lecture Hours.**

Evaluates frameworks for understanding international conflict and then uses these perspectives to survey security problems across several regions, including East Asia, the Middle East and South Asia.

INTA 621 Chinese Foreign Policy**Credits 3. 3 Lecture Hours.**

Provide an overview of Chinese Foreign Policy since 1949, understand the major external and domestic determinants of Chinese foreign policy, the results of domestic politics and/or international pressures, the role of ideology in Chinese foreign policy, economic interests affecting Chinese foreign policy, and what drives China's involvement in international affairs.

INTA 622 Chinese Strategic Thought**Credits 3. 3 Lecture Hours.**

Intensive reading and research course in Chinese strategic thought from the Warring State period (403-221 BC) to 21st century China with two goals: to provide an introductory understanding of the nature of strategic thinking throughout Chinese history and to provide the conceptual tools to put Chinese strategic thought in a comparative perspective.

INTA 623 Grand Strategy**Credits 3. 3 Lecture Hours.**

Addresses origins of great powers' grand strategies, impact of international system on grand strategic options, alliance behavior of states, why and when great powers balance, impact of technology and location on strategies, and causes of great powers' overexpansion; utilizes theoretical approaches and historical case studies to understand grand strategies.

INTA 625 International Trade Policy Analysis**Credits 3. 3 Lecture Hours.**

Traditional and strategic trade theory and analysis are used to examine such concepts as comparative advantage, Heckscher-Ohlin-Samuelson model, gains from specialization and trade, partial equilibrium analysis of free trade, violations of the free trade model, welfare effects of trade, trade creation and diversion, and other topics.

Prerequisites: Graduate classification; approval of instructor.**INTA 626 Balance of Payments in Theory and Policy****Credits 3. 3 Lecture Hours.**

Basic macroeconomics of open economy, coordination of policies and exchange rate regimes; the main characteristics of the international payments system, the role of international organizations and proposals for reform; intended as a survey course with emphasis on current policy issues.

Prerequisites: Graduate classification; approval of instructor; ECON 203 or equivalent.**INTA 627 Foundations of Strategy and Statecraft****Credits 3. 3 Lecture Hours.**

Fundamental texts dealing with war and diplomacy from ancient Greeks through the present; authors will include Thucydides, Sun-tzu, Ibn Khaldun, Plutarch, Cicero, Augustine, Aquinas, Machiavelli, Hobbes, Bacon, Rousseau, Hume, Bentham, Grotius, Vattel, Montesquieu, Smith, Kant, The Federalists, Tocqueville, Burke, Mill, Hegel, Nietzsche, Clausewitz, Marx, Freud, Schmitt, Heidegger, and Rawls among others.

Prerequisites: Graduate classification and approval of instructor.**INTA 629 Multinational Enterprises****Credits 3. 3 Lecture Hours.**

Graduate seminar in international business; multinational enterprises (MNEs) are studied from various perspectives including economics, management, entry and expansion strategies, contractual agreements, transfer pricing, impacts on home and host countries, MNE-state relations, regional integration, public policies towards MNEs.

Prerequisite: Graduate classification.**Cross Listing:** IBUS 667 and MGMT 667.

INTA 630 International Economic Development**Credits 3. 3 Lecture Hours.**

Economic dimensions of international development issues in the context of the major problems facing development planners such as poverty, inequality, population growth, environmental impact, the urban-rural interface, subsistence, agriculture, gender concerns, low rates of human capital formation, and globalization.

INTA 631 U.S. Military Power**Credits 3. 3 Lecture Hours.**

Introduces U.S. general purpose forces; examine issues at the intersection of military strategy and operations, including force planning and future operational environment; relies on relevant historical examples including recent conventional and unconventional military campaigns.

INTA 632 Advanced Economic Development**Credits 3. 3 Lecture Hours.**

Research methods which are commonly used in evaluating the effectiveness of international development programs; overview of issues salient to the poor in developing countries around the world; education, health, credit constraints, gender inequality, migration and corruption.

Prerequisite: BUSH 635 or equivalent econometrics course.

INTA 633**Credits 3. 3 Lecture Hours.**

Political Consequences of Development. The political issues concerning consequences of development; does development foster transition to democracy or allow the elites to consolidate their power; does economic development shape the degree of cleavages in society; conditions under which political and economic institutions reinforce, complement, or subvert on another.

INTA 634 Politics and Development Policies**Credits 3. 3 Lecture Hours.**

Examines why some development policies succeed and others fail; the political processes behind these policies in developing countries, particularly those countries with weak political institutions; understanding the political aspects of decision-making and implementation to improve policy design and sustainability.

Prerequisite: BUSH 631.

INTA 635 Great Famines, War and Humanitarian Assistance**Credits 3. 3 Lecture Hours.**

Exploration of famines, their various definitions, theories of their causes and consequences; how those affected by them cope with the stages through which famines pass and means by which they may be predicted, measured and assessed.

INTA 636 International Development in Theory and Practice**Credits 3. 3 Lecture Hours.**

Reviews various definitions of development and the theories which explain why some countries develop and other do not; examination of current controversies and factors that lead to economic growth; the role good governance and democratic institutions play; the cultural values of a society; social services play in government.

Prerequisite: Graduate classification.

INTA 637 Field Research Methods**Credits 3. 3 Lecture Hours.**

Overview of major field research methods including field experiments, behavioral games and household surveys.

Prerequisite: Graduate classification.

INTA 638 Political Economy of Development in Africa**Credits 3. 3 Lecture Hours.**

Examination of how political forces shape economic outcomes and how political institutions develop and respond to socio-economic realities utilizing a political economy lens.

INTA 639 Homeland Security and Emergency Management**Credits 3. 3 Lecture Hours.**

Examines the evolution of emergency management; survey the multiple disciplines involved in the disaster process and examine future directions for this field.

INTA 640 The Politics and Practice of the Democracy Promotion**Credits 3. 3 Lecture Hours.**

Examination of the contemporary challenges of promoting democracy worldwide; explores existing theoretical and empirical literature in democracy promotion as a topic within international relations and comparative politics.

INTA 642 Institutions and Development**Credits 3. 3 Lecture Hours.**

An institutional perspective to examine how politics structures development possibilities from the policymaker and citizen perspectives.

INTA 643 International Organizations**Credits 3. 3 Lecture Hours.**

Theoretical and empirical aspects of the role, potentials and limitations of the International Organizations in world politics; IO's governmental and nongovernmental play and important role in efforts to resolve a wide range of universal problems; peace and security, human rights poverty and other related matters of concern to international society.

Prerequisite: Graduate classification.

INTA 644 Post Conflict Recovery and Development**Credits 3. 3 Lecture Hours.**

Focus on key challenges facing post conflict and disaster societies and how recovery and development programs work.

INTA 645 Women and Nations**Credits 3. 3 Lecture Hours.**

Examination of the role of women in shaping of international affairs and how international affairs shape the lives of women; implications of theories concerning international relations drawn from a masculine perspective; what the result of that imbalanced perspective might be; survey a wide variety of issue areas where the generalized invisibility of women and their concerns has had a significant impact.

INTA 646 Foreign Policy Analysis**Credits 3. 3 Lecture Hours.**

Examination of the actor-specific theory of international relations through a focus on foreign policy decision-making; interpretation of foreign policy making from multiple perspectives (e.g., individual, governmental, cultural identify) in order to enhance understanding of why certain policies emerge and prevail.

INTA 647 State Building and State Failure in the Developing World**Credits 3. 3 Lecture Hours.**

Focuses on state-building sometimes called nation-building in the developing world; issues of state weakness, state failure and international responses to security concerns associated with weak and failing states; studies the origins of the modern state; examines why states fail or remain weak; surveys ongoing debates on role of international community.

INTA 648 Contemporary Civil Wars**Credits 3. 3 Lecture Hours.**

Surveys major debates and competing theories on the causes, conduct, resolution and outcome of civil wars; causes of civil wars; participants and how they organize violence; how states respond and to what effect; considers how civil wars end and the domestic and international repercussions.

INTA 650 National Security Law**Credits 3. 3 Lecture Hours.**

An introduction to the nature and sources of national security law including such topics as the framework of separate branches of law with shared national security powers, maintaining national security abroad, terrorism and other national security threats, and protecting national security information.

Prerequisite: Graduate classification.**INTA 651 National Security Policy****Credits 3. 3 Lecture Hours.**

A graduate-level seminar on national security policy that will provide a forum for developing an understanding of key concepts, players, institutions, intergovernmental processes, and contemporary issues in the national security policy domain.

Prerequisite: Graduate classification.**INTA 652 The Role of Intelligence in Security Affairs****Credits 3. 3 Lecture Hours.**

A survey of U.S. Intelligence operations, techniques, objectives and resources, with particular emphasis on how intelligence has contributed and continues to contribute to U.S. national security.

Prerequisite: Graduate classification.**INTA 653 Technical Collections Systems for International Security****Credits 3. 3 Lecture Hours.**

An introduction to the technical aspects of remote sensing and signals technology applied to international security issues and an introduction to interpretation of the acquired information. Featured outside speakers from U.S. government agencies explain the operation of technical collection systems and their contribution to national and international security.

Prerequisites: Graduate classification; approval of instructor.**INTA 654 Military Strategy in the Conduct of Nations****Credits 3. 3 Lecture Hours.**

Overview of strategic thought and national security policy; focuses on both the works of prominent military theorists, the historical context, and the significance for current international strategic affairs.

Prerequisite: Admission to MPA or approval of instructor.**INTA 655 Nationalism, Immigration and Terrorism in the European Union****Credits 3. 3 Lecture Hours.**

Familiarization with the important trends in European politics and security; investigation of the rise of nationalism and extremist groups in the European Union; the newest immigration trends, their impact on the EU member states and on the EU as a whole; terrorism and other forms of political violence in the European Union and the strategies developed to counter them; relationships between extremist groups in Europe and the U.S.

Prerequisite: Graduate classification.**INTA 657/PSAA 657 Terrorism in Today's World****Credits 3. 3 Lecture Hours.**

Comprehensive survey of international terrorism from its origins to the present; emphasis on how the U.S. government has responded and how it has organized to counter the threat; all major terrorist groups studied; understanding the nature of the terrorist threat and the implications for the U.S. government.

Prerequisite: Graduate classification.**Cross Listing:** PSAA 657/INTA 657.**INTA 658 Congress and International Security****Credits 3. 3 Lecture Hours.**

Develop knowledge of Congress, gain a deeper understanding of the key concepts, players institutions, intergovernmental processes, and contemporary issues in the topic area of Congress and international and national security policy.

INTA 659 Transnational Security Issues**Credits 3. 3 Lecture Hours.**

Understand the composition, role, mission of offices, departments that comprise Intelligence Community; obtain appreciation for transnational security issues; address potential impact short/long term to U.S. national security policies and/or programs that may affect those transnational security issues by the year 2020.

INTA 661 NATO from Military Alliance to Collective Security**Credits 3. 3 Lecture Hours.**

Comprehensive overview of the central issues concerning the transformation of NATO from a defense security alliance into a collective security organization.

INTA 662 Intelligence Threats to National Security in the Modern Era**Credits 3. 3 Lecture Hours.**

Threats presented by the intelligence and security services of Russia, China, and Iran; discussion of the culture, mission, structure, and recent foreign intelligence threat activity both in the domestic and international arena.

INTA 663 International Transfer Pricing**Credits 3. 3 Lecture Hours.**

Valuation of cross-border transactions between units of a multinational enterprise; includes internal and external motivations for transfer pricing, managerial and economic approaches; estimates of transfer manipulation, arm's length standard, U.S. and OECD rules and procedures, tax court cases and ethical dilemmas.

Prerequisite: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**Cross Listing:** ECON 663 and MGMT 663.**INTA 664 The Middle East State System****Credits 3. 3 Lecture Hours.**

Key challenges facing post-war societies; how recovery and development programs work; includes conflict, humanitarian intervention and development.

INTA 665 National Security and Defense Planning**Credits 3. 3 Lecture Hours.**

Comprehensive overview of the central and enduring issues in U.S. national security and defense planning; examination of contending conceptions of the evolving international security environment.

Prerequisite: INTA majors or enrollment in National Security Affairs certificate.

INTA 667 International Crisis Management: The Policy Process**Credits 3. 3 Lecture Hours.**

Examination of the policymaking process used by U.S. government officials in response to rapidly moving international crisis situations; simulations of executive meetings, briefings and press conferences; analysis of political, diplomatic, legal and ethical issues involved.

Prerequisite: Graduate classification.**INTA 668 The Politics and History of the Arab Spring****Credits 3. 3 Lecture Hours.**

Explores and examines socioeconomic, geopolitical, and cultural factors behind uprising in the region.

INTA 669/NUEN 669 Nuclear Terrorism Threat Assessment and Analysis**Credits 3. 3 Lecture Hours.**

Study the manner in which we conduct threat assessments and the analysis of non-state actors in the fields of nuclear and radiological security; examine the history of threats and security issues in an effort to better understand terrorist groupings, their motivations and attack methodologies.

Prerequisite: Graduate classification.**Cross Listing:** NUEN 669/INTA 669.**INTA 670 International Affairs Capstone Seminar****Credits 3. 3 Lecture Hours.**

Capstone team exercise in subject related to international affairs. For MPIA majors only.

Prerequisites: For MPIA majors only, graduate classification and approval of MPIA director.**INTA 671 The Political Economy of the Middle East****Credits 3. 3 Lecture Hours.**

Surveys the main themes in political economy of the modern Middle East and North Africa (MENA); examination of the economic structures, institutions and policy challenges to countries in the region.

Prerequisite: Graduate classification.**INTA 672 East Asian Security****Credits 3. 3 Lecture Hours.**

Examination of international military, diplomatic and political dynamics in the Asia Pacific region; focus on contemporary security relations; examines a wide range of security challenges facing the region; familiarization with the strategic preferences of key actors in the major areas of potential conflict.

INTA 673 Chinese Domestic Politics in Transition**Credits 3. 3 Lecture Hours.**

Examination of the origins and development of contemporary political system in China; the history and foundational experiences of the Chinese Communist Party; revolutionary and reformist leaderships and its trace from the origins, functioning, and evolution of contemporary China's political institutions; current and future domestic challenges facing China from a public policy perspective.

INTA 674 U.S. Foreign Policy in the Persian Gulf**Credits 3. 3 Lecture Hours.**

Examination of U.S. policy in the Persian Gulf against background of oil politics, the Cold War, rise of Islamism, and multiple major wars; compares and contrasts recent U.S. administrations in terms of approaches used to advance U.S. interests and deal with various challenges in the Persian Gulf.

INTA 675 Religion and Politics in Iran**Credits 3. 3 Lecture Hours.**

Examination of political and social dynamics of contemporary Iran including Iran's modern history; roots of the Islamic Revolutions; establishment of Iran's Islamic theocracy, Iran-Iraq war and its major consequences; the emergence of new generation of religious intellectuals; rise and decline of various political movements.

INTA 676 International Politics of the Middle East**Credits 3. 3 Lecture Hours.**

Focus on critical issues including Great Power involvement in the region, and the regional and international effects of Arab nationalism, Zionism, Islamism, post-Islamism, oil and aid rents, ethnicity, religious minorities, gender and human rights.

INTA 677 Islam in International Politics**Credits 3. 3 Lecture Hours.**

Investigate how Political Islam developed in the first half of the century and why it gained so much support. Examine the various strategies state elites have taken toward political Islam and will consider the regional and transnational manifestations and implications of Islamist movements; intended for individuals preparing for professional careers in the conduct of international affairs.

INTA 678 Interstate War: Theory and History Implications for the 21st Century**Credits 3. 3 Lecture Hours.**

Comprehensive look at the central organizing principles for international security and the nature and role of war in contemporary relations among state and the evolving challenges.

INTA 680 Political Violence and Terrorism within the International System**Credits 3. 3 Lecture Hours.**

Focuses on terrorism as special case of political violence and on non-state actors as a specific category of players toward which the international system must adapt; develops underlying concepts of terrorism and core response strategies to terrorism; develops both national and international responses to terrorism, emphasizing need for complementary policy approaches.

INTA 682 Law of War**Credits 3. 3 Lecture Hours.**

Provides key concepts for those who desire an expanded understanding of how and why Law of War influences U.S. Military operations and national security and foreign policy decisions today; introduction to the historical, customary development and the significant efforts of Law of War codification such as the Hague and Geneva Conventions.

INTA 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Directed internship in a public or private organization to provide on-the-job training with professionals in organizational settings appropriate to the student's professional objectives.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.**INTA 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual instruction in selected problems in government and public service.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

INTA 686 Russia and International Politics**Credits 3. 3 Lecture Hours.**

Examines changes within Russia and its role in international politics since 1991, emphasizing the period of Vladimir Putin's presidency, explores Putin's approach to political, economic and social challenges facing Russia, as well as the war in Chechnya and terrorism within Russia, also examines Russia's critical relationship with the United States.

INTA 688 Alliance Politics: Theory and Practice**Credits 3. 3 Lecture Hours.**

Examination of the origins of alliances, the course of alliance politics and major cases of inter-and intra-allied relations.

Prerequisite: Graduate classification.**INTA 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of government and public service. May be repeated for credit.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.**INTA 690/CYBR 660 Cybersecurity Literacy for the Global Arena****Credits 3. 3 Lecture Hours.**

Research technical literacy in cybersecurity; exploration of cybersecurity in applied settings to include private and public sector; use of cybersecurity literacy to develop policy guidelines; examination of intent of cyber-actors; technical and policy risk-mitigation strategies.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** CYBR 660/INTA 690.**INTA 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

INTA 694 Economic Restructuring in Latin America**Credits 3. 3 Lecture Hours.**

Studies Latin America's economic development; understand economic antecedents to recent reforms as well as resulting impact of these reforms on workers, growth, and living standards; critically evaluate arguments related to the political economy of international trade, finance and development.

INTA 696 Analytic Tradecraft**Credits 3. 3 Lecture Hours.**

Perform analysis in the U.S. Intelligence Community; hone writing, briefing and analytical skills; focus on fundamentals of critical thinking, the psychology of analysis and intelligence process.

ISEN - Indust. & Systems Engr.

ISEN 601 Location Logistics of Industrial Facilities**Credits 3. 3 Lecture Hours.**

Selection of the optimal locations of industrial plants and distribution centers through analytical modeling of the costs of inventory storage, transportation, utilities, labor supply and other cost components.

Prerequisites: ISEN 620.**ISEN 602 Applications of Random Processes****Credits 3. 3 Lecture Hours.**

Introduction to probability and random processes as a basis for studying topics in industrial engineering and operations research.

Prerequisites: ISEN 609; STAT 212 or STAT 601.**ISEN 603 Advanced Logistics****Credits 3. 3 Lecture Hours.**

Topics in logistics including measures of logistical systems performance, facilities location-allocation, production/distribution system design, transportation network design, vehicle routing; emphasis on mathematical modeling based on large scale integer programs and solution approaches for general network design problems.

Prerequisites: ISEN 601, ISEN 622, ISEN 623, ISEN 668 or approval of instructor.**ISEN 605 Material Handling Systems****Credits 3. 3 Lecture Hours.**

Analysis and design of integrated material handling systems; automatic storage and retrieval of unit loads, and identifying and establishing boundary conditions on key parameters required to specify the desired system required for equipment vendors to design appropriate hardware.

Prerequisites: ISEN 420; ISEN 416.**ISEN 608 Industrial Case Analysis****Credits 3. 3 Lecture Hours.**

Practice in applications of principles to the solution of actual case problems involving broad management decisions.

Prerequisite: Approval of instructor.**ISEN 609 Probability for Engineering Decisions****Credits 3. 3 Lecture Hours.**

Introduction to probability and stochastic processes for characterization of uncertainty in engineering decisions.

Prerequisite: Approval of instructor.**ISEN 611 Foundations of Technology Evaluation and Assessment****Credits 3. 3 Lecture Hours.**

Quantifying gambles arising in engineering activities associated with the design, deployment, and operations of technology; analytical foundations of technology evaluation and assessment from an engineering perspective; focus on examination of probability models supporting quantification of value and risk.

Prerequisites: ISEN 609 or approval of instructor.**ISEN 612 Design by Reliability****Credits 3. 3 Lecture Hours.**

Quantitative reliability analysis in engineering design. Reliability methods applicable to risk based design, component reliability and degradation, static and dynamic system reliability modeling and analysis, life testing, stress/strength analysis, and fault tree analysis.

Prerequisites: ISEN 609; STAT 414.**ISEN 613 Engineering Data Analysis****Credits 3. 3 Lecture Hours.**

Selected topics in probability and data analysis for quality in engineering problems; measurement principles, data collection and data analysis to solve quality engineering problems. Introduction to courses in the assurance sciences-reliability, maintainability, quality control and robust design.

ISEN 614 Advanced Quality Control**Credits 3. 3 Lecture Hours.**

Advanced methods applied to quality control and anomaly detection; classical treatments and recent developments in statistical process control; evaluation, design and maintenance of quality control programs; focus on monitoring and root cause identification.

Prerequisite: STAT 212 or STAT 601.

ISEN 615 Production and Inventory Control**Credits 3. 3 Lecture Hours.**

Model development for inventory management and for production planning; production control models for line balancing, lot sizing, dispatching, scheduling, releasing, kitting, MRP and just-in-time with treatment of flexible manufacturing and assembly.

Prerequisites: ISEN 620; ISEN 609.**ISEN 616 Design and Analysis of Industrial Experiments****Credits 3. 3 Lecture Hours.**

Fundamental theory, concepts and procedures required for industrial experimental design, statistical data analysis, and model building, with emphasis on engineering formulations and applications. One-factor experiments with and without restrictions on randomization, treatment comparison procedures, Latin and other squares, factorial experiments, full and fractional two-level factorial experiments, blocking in factorial designs, response surface methodologies and introduction to Taguchi methods.

Prerequisite: STAT 212 or STAT 601.**ISEN 617 Quantitative Models for Supply Chain Coordination****Credits 3. 3 Lecture Hours.**

Concepts, complexities, and models pertaining to supply chain management and relate these to recent practical initiatives; includes channel coordination models, supply chain contracting, and vendor-managed, inventory models.

Prerequisites: ISEN 615, ISEN 623, and ISEN 609 or STAT 615 or approval of instructor.**ISEN 618 Stochastic Processes in the Assurance Sciences****Credits 3. 3 Lecture Hours.**

Stochastic processes necessary to deal with advanced problems in reliability, maintainability and other related areas.

Prerequisite: ISEN 602.**ISEN 619 Analysis and Prediction****Credits 3. 3 Lecture Hours.**

Data-mining methods and data-driven models; statistical model building and parameter estimation for Markov processes; sampling of dynamic systems with random disturbances; on-line identification algorithms; design of time-series control charts for process monitoring; multivariate analysis; applications using real data.

Prerequisite: ISEN 609.**ISEN 620 Survey of Optimization****Credits 3. 3 Lecture Hours.**

Theory and numerical methods for deterministic linear and nonlinear optimization; topics include linear programming, unconstrained-nonlinear optimization, constrained-nonlinear optimization, Lagrange and K-K-T conditions, and numerical algorithms.

Prerequisite: MATH 304 or MATH 311.**ISEN 621 Heuristic Optimization****Credits 3. 3 Lecture Hours.**

Focus on heuristic optimization methods that search beyond local optima; includes neighborhood search methods and advanced search strategies such as genetic algorithms, simulated annealing, neural networks, tabu search, and greedy randomized adaptive search procedures.

Prerequisites: ISEN 620 or ISEN 622 or approval of instructor.**ISEN 622 Linear Programming****Credits 3. 3 Lecture Hours.**

Development of the mathematics and algorithms associated with linear programming; convex sets and cones, polyhedral sets, duality theory, sensitivity analysis, simplex, revised simplex and dual simplex methods; also covered are bounded variables, column generation, decomposition, integer programming; computer assignment.

Prerequisite: MATH 304.**ISEN 623 Nonlinear and Dynamic Programming****Credits 3. 3 Lecture Hours.**

Understanding of algorithms for nonlinear optimization; development of optimality conditions and different types of algorithms for unconstrained and constrained problems; formulation and solution of many types of discrete dynamic programming problems.

Prerequisite: MATH 304.**ISEN 624 Applied Distribution and Queueing Theory****Credits 3. 3 Lecture Hours.**

Queueing theory and its applications; single and multiple channels, priorities, balking, batch arrivals and service, and selected non-Markovian topics.

Prerequisite: ISEN 609 or ECEN 646.**ISEN 625 Simulation Methods and Applications****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Fundamental methodologies of simulation modeling; random number and variate generation, statistical analysis of model output, and discrete event modeling using a commercial simulation language.

Prerequisite: STAT 212 or STAT 601.**ISEN 627 Engineering Analysis for Decision Making****Credits 3. 3 Lecture Hours.**

Principles and application of techniques in analysis of decision processes involving engineering systems under uncertainty. Areas of utility and information theory as related to quantification of information for decision-making.

Prerequisites: ISEN 609; STAT 601 or approval of instructor.**ISEN 629 Engineering Optimization****Credits 3. 3 Lecture Hours.**

Develops a modern framework for studying nonlinear programming problems using convex analysis; convex sets and cones, separating hyperplanes, sub-differentiability, conjugate transforms, duality theory and parametric analysis; applications of the principles and methods will be studied.

Prerequisite: ISEN 623;**corequisite:** MATH 409.**ISEN 630 Human Operator in Complex Systems****Credits 3. 3 Lecture Hours.**

Basic understanding of the theory and practice of human factors engineering. Topics are presented within the framework of humans as functioning systems and their requirements when incorporated in hardware and software systems.

ISEN 631 Cognitive Systems Engineering**Credits 3. 3 Lecture Hours.**

Analyze how artifacts, displays, social interaction and factors such as stress, time pressure, competing demands and uncertainty affect human cognitive functions such as perception, attention, memory, decision-making and problem-solving in joint human-machine systems; user-centered design techniques, research and evaluation methods introduced and applied to a design project.

Prerequisites: ISEN 635, ISEN 430/ISEN 630, or approval of instructor.

ISEN 635 Human Information Processing**Credits 3. 3 Lecture Hours.**

Perceptual and cognitive issues as related to the design of man-machine systems; perception, central processes, decision making and other performance aspects of the human component as an information processor.

Prerequisite: ISEN 430 or approval of instructor.**ISEN 636 Large-Scale Stochastic Optimization****Credits 3. 3 Lecture Hours.**

Introduction to models, theory and computational methods for large-scale stochastic optimization including decomposition-coordination algorithms for stochastic programming such as generalized Benders decomposition and resource-price directive methods; emphasis on practical algorithm implementation and computational experimentation.

Prerequisites: ISEN 620 or ISEN 622, STAT 610 and CSCE 602 or approval of instructor.**ISEN 637 Stochastic Dynamic Programming****Credits 3. 3 Lecture Hours.**

Methodologies for stage-wise stochastic-decision processes; includes finite-horizon models, infinite-horizon discounted total cost models, and average cost models; applications of methods to various situations.

Prerequisites: ISEN 609 and ISEN 622, or approval of the instructor.**ISEN 638 Polyhedral Theory and Valid Inequalities****Credits 3. 3 Lecture Hours.**

Advanced knowledge of polyhedral theory and valid inequalities for (mixed) integer programming; introduction to fundamental concepts in polyhedral theory and several approaches to generation of valid inequalities; includes state-of-the-art advancements and current avenues of research.

Prerequisite: ISEN 668.**ISEN 640 Systems Thinking and Analysis****Credits 3. 3 Lecture Hours.**

Introduction to the systems thinking process and the fundamental considerations associated with the engineering of large-scale systems, or systems engineering.

Prerequisite: MATH 304 or approval of instructor.**ISEN 641 Systems Engineering Methods and Frameworks****Credits 3. 3 Lecture Hours.**

Concepts, methodology, methods and tools for discovery, definition, analysis, design, creation, and sustainment of systems involving information, physical, and human elements; architecture modeling methods include IDEF/UPDM; systems engineering frameworks include DoDAF/MoDAF, and Zachman; analysis tools include executable architectures to assess consistency, interoperability and performance.

Prerequisites: MATH 304 or approval of instructor.**ISEN 643/CVEN 654 Strategic Construction and Engineering Management****Credits 3. 3 Lecture Hours.**

Strategic and systems perspectives applied to construction and engineering management projects, organizations, and industries; system dynamics methodology to model construction and engineering systems; understanding drivers of performance; feedback and high leverage points for performance improvement.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** CVEN 654/ISEN 643.**ISEN 644/CVEN 644 Project Risk Management****Credits 3. 3 Lecture Hours.**

Identifies causes of risks in projects; discusses probabilistic description of risks and formulation of risk models; Bayesian methods for revising probabilities; qualitative and quantitative risk assessment; setting contingencies on budgets and schedules; risk mitigation and risk management; handling technological risk; Utility theory and game theory in management of risks.

Prerequisite(s): STAT 601 or equivalent; graduate status in Engineering, approval of instructor.**Cross Listing:** CVEN 644.**ISEN 645 Lean Thinking and Lean Manufacturing****Credits 3. 3 Lecture Hours.**

Introduces the principles of lean thinking in modern manufacturing systems; philosophical, managerial and organizational requirements studied; lean manufacturing quantitative modeling methodologies, lean manufacturing cell design and case study analysis.

Prerequisites: ISEN 609 or approval of instructor.**ISEN 650 Healthcare Delivery Systems Modeling and Analysis****Credits 3. 3 Lecture Hours.**

Challenges in modeling and analysis of healthcare systems; deterministic and stochastic approaches to model and analyze healthcare systems; existing and emerging policies in healthcare and effects on healthcare system models.

Prerequisite: ISEN 609, ISEN 620, or approval of instructor.**ISEN 654 Manufacturing Systems Planning and Analysis****Credits 3. 3 Lecture Hours.**

The systems perspective of a computer integrated manufacturing system; manufacturing and its various levels and the planning and control of product movement through the production system in the context of using realtime control, multiprocessor systems, network architectures and databases.

Prerequisite: ISEN 420.**ISEN 655 Control Issues in Computer Integrated Manufacturing****Credits 3. 3 Lecture Hours.**

Examines the nature of computer aided manufacturing systems with emphasis on control; an architecture for control of CAM systems is presented; control issues, problems and procedures to control CAM systems are studied and developed.

Prerequisite: Approval of instructor.**ISEN 656 Virtual Manufacturing****Credits 3. 3 Lecture Hours.**

Focus on principles of virtual reality and 3-D graphics and their application in manufacturing, automation and simulation; virtual reality modeling, motion, collision detection and networking issues studied and developed.

Prerequisite: Approval of instructor.**ISEN 658 Principles of Manufacturing Processes****Credits 3. 3 Lecture Hours.**

Focus on understanding the physical principles of manufacturing processes using theory, analytical and numerical techniques; application of physics-based theory to specific industrial manufacturing applications and case studies; includes solid mechanics and plastic deformation with application to deformation and cutting processes; application of fluid flow and rheology in polymer processing and casting; analysis of thermal effects and transient heat transfer problems in tribology, cutting and additive manufacturing processes.

ISEN 659 Modeling and Analysis of Manufacturing Systems**Credits 3. 3 Lecture Hours.**

Analytical models applied to the description, design operation and control of manufacturing processes and systems; includes serial assembly, jobshops, FMS and cellular manufacturing configurations.

Prerequisites: ISEN 609.**ISEN 660 Quantitative Risk Analysis****Credits 3. 3 Lecture Hours.**

Fundamental concepts, techniques, and applications of quantitative risk analysis and risk-informed decision making for all engineering fields; practical uses of probabilistic methods are demonstrated in exercises and case studies from diverse engineering areas.

Prerequisites: Graduate classification.**Cross Listing:** CHEN 660 and SENG 660.**ISEN 661 Network-Based Planning and Scheduling Systems****Credits 3. 3 Lecture Hours.**

Fundamental theory, mathematical modeling, and algorithms of network flow models including shortest path models maximum flow and cost minimization models; out-of-kilter algorithm; pure and generalized network specializations of the primal simplex method; introduction to multi-commodity networks.

Prerequisite: ISEN 620 or 622.**ISEN 662 Production Economics****Credits 3. 3 Lecture Hours.**

Develop an understanding of the analytical and empirical techniques required to conduct an analysis of the magnitude and the sources of productivity change; programming and regression approaches to analyze industries include manufacturing, energy, and service systems.

Prerequisites: ISEN 303 and ISEN 620 or approval of instructor.**ISEN 663 Engineering Management Control Systems****Credits 3. 3 Lecture Hours.**

Integration of human relations, planning and control concepts, systems analysis and design, and principles of management oriented toward engineering functions within an organization; organizational design and administration as they impact along the product life cycle, i.e., research, design, development, production and use.

ISEN 664 Principles of Scheduling**Credits 3. 3 Lecture Hours.**

Scheduling and sequencing for production, assembly, supply chain, logistics and service operations; relevant solution methods including algebraic, branch and bound, Lagrangian relaxation, facet generation, branch and price, heuristics and simulation; computational complexity issues.

Prerequisite: ISEN 620 or ISEN 622 or approval of instructor.**ISEN 665/SYEN 645 Management of Engineering Systems****Credits 3. 3 Lecture Hours.**

Theory and practice of leadership and management in engineering organizations; focus on both "hard" skills (systems engineering process, project management, planning, forecasting and financial analysis) and "soft" skills (leadership styles, motivation, teamwork, managing creative people, navigating informal networks); science and technology policy, economic implications of engineering and technology.

Prerequisite: Graduate classification.**Cross Listing:** SYEN 645/ISEN 665.**ISEN 667 Engineering Economy****Credits 3. 3 Lecture Hours.**

Fundamental concepts and advanced techniques of engineering economic analysis; evaluation of alternative capital investments considering income taxes, depreciation and inflation; discounted cash flow analysis of competing projects, break-even analysis and determination of rate of return on investment. Risk and uncertainty in engineering analysis.

Prerequisite: ISEN 303 or approval of instructor.**ISEN 668 Integer Programming****Credits 3. 3 Lecture Hours.**

Formulation principles and general approaches for solving integer (and mixed, integer linear) programs including preprocessing, cutting plane methods, branch and bound, branch and cut, branch and price, and Lagrange relaxation; classical problem structures with special-purpose solution algorithms; fundamental theory of polyhedra, methods to generate valid inequalities and computational complexity.

Prerequisite: ISEN 620 or ISEN 622.**ISEN 669 Software Tools for Stochastic Decision Support Analysis****Credits 3. 3 Lecture Hours.**

Overview of stochastic decision analysis; focus on Palisade Corporation's Decision Tools Suite of Excel add-in macros; topics include sensitivity analysis of Excel models, decision tree construction and analysis, and simulation within Excel.

Prerequisite: STAT 630 or equivalent and ISEN 667.**ISEN 670/SYEN 643 Theory of Socio-Technical Systems****Credits 3. 3 Lecture Hours.**

Philosophy, origins, theory, principles and methodologies of complex socio-technical systems; emphasis on holistic thinking for systems engineering; systems approach; cybernetics; complexity science; physical and biological systems; social, economic and political systems; network representations of systems; real-world decision-making; systems dynamics; emergent behavior; systems architecture; engineered systems today and in the future.

Prerequisite: Graduate classification.**Cross Listing:** SYEN 643/ISEN 670.**ISEN 671 Human Error and Resilient System Design****Credits 3. 3 Lecture Hours.**

Variables that influence human performance including cognitive, behavioral and physical factors are examined and discussed; case studies from a variety of industries and domains are employed to illustrate the identification and causes of human errors; system design strategies for reducing the likelihood of error occurrence and mitigating error consequences are practically applied to real design cases from industry, military and government agencies.

Prerequisites: Graduate classification; approval of instructor; ISEN 330 or ISEN 630.**ISEN 673 Prescriptive Analytics for the Service Industry****Credits 3. 3 Lecture Hours.**

Models and methods based on operations research for predictive and prescriptive analytics applied to the service industry; emphasis on forecasting, decision-analysis, multi-objective optimization, revenue management and decision-making under uncertainty; applications include healthcare, hospitality, transportation, call-centers, data centers, electrical utilities, finance and retail.

Prerequisites: Graduate classification; approval of instructor.

ISEN 681 Seminar**Credit 1. 1 Lecture Hour.**

Opportunity to present research in a professional atmosphere. Presentations are not restricted to thesis or problem research. Acquaints the student with departmental research activities and procedures in documenting research.

ISEN 684 Professional Internship**Credits 1 to 16. 1 to 16 Other Hours.**

On-the-job training under supervision of practicing engineers in settings appropriate to professional objectives. May be repeated for credit.

Prerequisite: Approval of committee chair and department head.

ISEN 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Special topics not within scope of thesis research and not covered by other formal courses.

Prerequisite: Graduate classification in industrial engineering.

ISEN 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of industrial engineering. May be repeated for credit.

Prerequisite: Approval of instructor.

ISEN 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research in industrial engineering field; content and credit dependent upon needs of individual student.

ISEN 692 Professional Study**Credits 1 to 9. 1 to 9 Other Hours.**

Approved professional study or project. May be taken more than once, but not to exceed 4 hours of credit toward a degree. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of instructor.

ISTM - Mgmt Info Systems

ISTM 601 Fundamentals of Business Programming**Credits 3. 3 Lecture Hours.**

Business Application Development using both procedural and object-oriented programming techniques; use of component based software design and development for distributed business software systems.

Prerequisite: Graduate business classification or approval of instructor.

ISTM 610 Business Data Communications**Credits 3. 3 Lecture Hours.**

Concepts and technology of on-line and network-based systems in business; analysis of data communication requirements, design, selection and application of network technologies including wide and local area networks, distributed processing, network architecture, and systems management and control; software simulation projects emphasized. Classification 6 students may not enroll in this course.

Prerequisites: Graduate classification.

ISTM 612 Management Information Systems**Credits 1 to 3. 1 to 3 Lecture Hours.**

Concepts, theories, and the strategic role of information systems as applied to business organizations; highly integrative/cross functional in nature. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment is limited to MBA students.

ISTM 615 Business Database Systems**Credits 3. 3 Lecture Hours.**

Information processing and management involving applications and user orientation in a business environment using commercially available database management systems.

Prerequisite: Knowledge of one programming language.

ISTM 620 Systems Analysis and Design**Credits 3. 3 Lecture Hours.**

Methodologies, techniques, and tools for information systems analysis and design; the analysis and logical design of business processes and management information systems focusing on the systems development life cycle; techniques for logical system design.

Prerequisite: ISTM 615 or concurrent enrollment.

ISTM 622 Advanced Data Management**Credits 3. 3 Lecture Hours.**

Data/database management and advanced SQL techniques; issues of data security, backup and recovery, large scale databases, master data management, concurrent user data access, scalability, and policies.

Prerequisites: ISTM 615 or equivalent; graduate classification in business.

ISTM 624 Advanced Systems Analysis and Design**Credits 3. 3 Lecture Hours.**

Advanced topics in business systems analysis and design; alternative methodologies such as agile development, extreme programming, Rational Unified Process; Unified Modeling Language; bench marking and best practices for systems development; cost/benefit analysis, estimation and budgeting for business information systems; testing; patterns, domain-driven design; process modeling; service-oriented architecture and cloud computing.

Prerequisite: ISTM 620 or equivalent; graduate classification in business.

ISTM 630 MIS Project Management and Implementation**Credits 3. 3 Lecture Hours.**

Advanced coverage of systems development topics with emphasis on the management and implementation of business computing systems; group project orientation to include feasibility analysis, alternative evaluation and selection, and management approval; use of software engineering tools where appropriate. Classification 6 students may not enroll in this class.

Prerequisite: ISTM 620.

ISTM 631 Information Systems Design and Development Project**Credits 3. 3 Lecture Hours.**

Design and delivery of functional, multi-platform application system using current technologies; user interface design emphasized; issues of mobile device forms, software delivery, and development.

Prerequisites: Graduation classification; ISTM 622; ISTM 630.

ISTM 635 Business Information Security**Credits 3. 3 Lecture Hours.**

Explores the business, managerial, and technological aspects of information security; analysis, design, and implementation issues surrounding effective information security; authentication, authorization, availability, business continuity planning, confidentiality, disaster recovery, encryption, firewalls, fraud protection, security policy development, integrity, risk management, virus protection, VPNs and wireless security. Classification 6 students may not enroll in this course.

Prerequisite: ISTM 610.

ISTM 637 Data Warehousing**Credits 3. 3 Lecture Hours.**

Provides an understanding of the process by which a data warehouse system is designed and developed along with the underlying concepts and software systems; includes OLAP models and their differences with standard OLTP models.

Prerequisite: ISTM 615 or approval of instructor.

ISTM 640 Information Systems Sourcing**Credits 3. 3 Lecture Hours.**

Identify the challenges of information systems sourcing, as well as the costs, risks, rewards, and strategies involved in sourcing situations; focus on global sourcing of professional services, including IT, business process, and knowledge process outsourcing; issues such as vendor management, legal issues, distributed work teams, and comparing alternative sourcing strategies.

Prerequisites: ISTM 624 or equivalent or approval of instructor; graduate classification in business.

ISTM 643 Corporate Information Planning**Credits 3. 3 Lecture Hours.**

Concepts regarding the design and use of computer-based management information and decision support systems; combinations of computing hardware and software and design concepts evaluated to meet managers' information needs. Classification 6 students may not enroll in this course.

Prerequisites: ISTM 615 or equivalent or approval of instructor.

ISTM 645 IT Security Controls**Credits 3. 3 Lecture Hours.**

Familiarization with planning, design, and implementation of controls to minimize risks to business information; focus on the importance of managing business information security; introduction to the tools, concepts and theories to safeguard an organization's information systems and IT assets; understanding of cryptography and application, operations, and physical security.

Prerequisite: ISTM 635.

ISTM 646 E-Services**Credits 3. 3 Lecture Hours.**

Examines the deployment and utilization of information technologies by businesses, governments and not-for-profit organizations to deliver services, with applications in banking and financial advisory services, healthcare, and federal, state and local governments.

Prerequisite: ISTM 620.

ISTM 650 Business Data Mining**Credits 3. 3 Lecture Hours.**

Rationale for business Data Mining through case studies of business applications; process of data mining by using commercial Data Mining software on very large data sets; half of the course devoted to lab training in the use of Data Mining software including SAS Enterprise Miner and SPSS Clementine.

Prerequisite: STAT 652 or approval of instructor.

ISTM 652 Customer Relationship Management and Technologies**Credits 3. 3 Lecture Hours.**

Theory and application of information technology in customer relationship management, construction of CRM infrastructures in organizations.

Prerequisite: ISTM 615.

ISTM 654 E-Commerce Technologies**Credits 3. 3 Lecture Hours.**

Theory and application of constructing E-Commerce sites, including n-tier architecture and technologies, web servers, server interactions with databases, and transaction managers.

Prerequisite: ISTM 615 or equivalent.

ISTM 655 Security Management and Compliance**Credits 3. 3 Lecture Hours.**

Familiarization with managerial and legal aspects of business information security; focus on importance of managing business information security and theories to help safeguard an organization's information systems and IT assets; understanding of Security Architecture and Design, Business Continuity and Disaster Recovery Planning, Laws Investigation and Ethics.

ISTM 656 Global Information Systems**Credits 3. 3 Lecture Hours.**

Impact and the central role of Information Systems (IS) on globalization of business; issues of deployment of information systems and technology in international commerce, global IS environmental variables such as technology, legal, political, economic, social and cultural. Classification 6 students may not enroll in this course.

Prerequisite: ISTM 610 or equivalent, or approval of instructor.

ISTM 670 IT Consulting**Credits 3. 3 Lecture Hours.**

Concerns with the practice of IT consulting; and develops an understanding of consulting practices, business development and revenue management, client relationships, team-based knowledge, knowledge services, technology evaluation, selection and integration, collaboration tools, business process and organizational change, and large application implementations; involves a full semester client-based project.

Prerequisites: ISTM 615, ISTM 620, and SCMT 660, and approval of instructor.

ISTM 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

A directed internship in an organization to provide students with on-the-job training with professionals in organizational settings appropriate to the student's professional objectives. May be repeated for credit. Classification 6 students may not enroll in this course.

Prerequisite: Approval of committee chair and department head.

ISTM 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed study on selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor and graduate advisor.

ISTM 686 Theory and Research in Management Information Systems**Credits 3. 3 Lecture Hours.**

Theory, applications and human and organizational issues of Management Information Systems (MIS); current academic research into the analysis, design and implementation of computer information systems. Classification 6 students may not enroll in this course.

Prerequisites: Doctoral classification and approval of instructor.

ISTM 689 Special Topics in...**Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in identified area of information systems, operations management or management science. Classification 6 students may not enroll in this course. May be repeated for credit.

ITAL - Italian

ITAL 692 Readings

Credits 3. 3 Lecture Hours.

Readings in Italian literary texts in the original language.

Prerequisite: Graduate classification.

ITDE - Interdisciplinary Engr.

ITDE 685 Directed Studies

Credits 1 to 12. 1 to 12 Other Hours.

Research problems of limited scope designed primarily to develop research technique.

ITDE 689 Special Topics In...

Credits 1 to 4. 1 to 4 Lecture Hours.

Selected topics in an identified area of interdisciplinary engineering. May be repeated for credit.

Prerequisites: Approval of instructor.

ITDE 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research for thesis or dissertation.

KINE - Kinesiology

KINE 601 Reading Research Publications in Kinesiology

Credits 3. 3 Lecture Hours.

Instruction in, and development of, research skills through the study of published reports and readings in kinesiology.

KINE 606 Motor Neuroscience I

Credits 3. 3 Lecture Hours.

Neurophysiology of the neuromuscular system with emphasis on motor control; topics include organization of the CNS; reflexes; integration of sensory information; experimental approaches to study neuromuscular control and neurophysiology of contemporary motor control theories.

Prerequisite: KINE 406 or equivalent.

KINE 609 Professional and Career Development in Health and Kinesiology

Credits 3. 3 Lecture Hours.

Development of skills and knowledge on developing an academic and research career; structure of academics; strategies for securing an academic position; tenure and promotion process.

Prerequisite: Graduate classification.

KINE 614 External Research Fund Development

Credits 3. 3 Lecture Hours.

Preparation of external research funding applications with emphasis on NIH proposals and other external funding sources; methods and commonly used processes of federal grant review and the funding decision process.

Prerequisite: Graduate classification.

KINE 622 Supervision of Health and Kinesiology

Credits 3. 3 Lecture Hours.

Principles and processes of supervision; in-service training of personnel.

KINE 623 Administration of Health and Kinesiology

Credits 3. 3 Lecture Hours.

Administration of comprehensive programs of kinesiology in higher education settings.

KINE 624 Pedagogical Research in Teaching/Physical Education

Credits 3. 3 Lecture Hours.

Examine pedagogical research in education and relate to the specialty area of physical education; study key research paradigms that now influence inquiry in physical education and link to current practices in effective teaching.

Prerequisites: Graduate classification and approval of instructor.

KINE 626 Exercise for Clinical Population

Credits 3. 3 Lecture Hours.

Principles relevant to exercise programming for persons with chronic disease/disability; includes information for each condition: pathophysiology, effect on exercise response, effects of exercise on disease process, and recommendation for exercise testing and programming.

Prerequisite: KINE 433 or instructor approval.

KINE 628 Nutrition in Sport and Exercise

Credits 3. 3 Lecture Hours.

Interaction between nutrition, exercise, and athletic performance; including: biochemical and physiological aspects of nutrition and exercise; nutrition for training and competition; exercise and oxidant stress; nutritional supplements and ergogenic acids; and nutritional aspects of body composition and weight control.

Prerequisite: Graduate classification; BIOL 320; KINE 433 or approval of instructor.

KINE 629 Physiology of Strength and Conditioning

Credits 3. 3 Lecture Hours.

Physiological, bio-mechanical, and metabolic aspects of muscular strength and conditioning programs for various athletic and non-athletic populations; review of resistance training based on scientific literature; promote the use of a structured scientific approach in the prescription of progressive resistance training.

Prerequisite: Graduate classification, BIOL 320; KINE 433 or approval of instructor.

KINE 630 Periodized Models

Credits 3. 3 Lecture Hours.

Scientific principles and procedures relating to detailed cutting edge periodized training designs; emphasis on researched based periodized program designs and implementation regarding the background/history, concepts, variations and application of relevant periodization models.

Prerequisite: Graduate classification or approval of instructor.

KINE 631 Specialized Strength and Conditioning Techniques

Credits 3. 3 Lecture Hours.

Research based physiological responses and adaptations associated with power, speed, quickness, flexibility and mobility; laboratory demonstration/implementation and specific practical experiences based on available scientific research. Practical mastery as well as theoretical understanding required.

Prerequisite: KINE 629 or approval of instructor.

KINE 637 Exercise Physiology I

Credits 3. 3 Lecture Hours.

Functional changes brought about by acute and chronic exercise; topics include muscle structure/function, energy transduction, biochemistry of exercise, muscle mechanics, fatigue and adaptation.

Prerequisite: KINE 433 or equivalent.

KINE 638 Exercise Physiology II**Credits 3. 3 Lecture Hours.**

Functional changes brought about by acute and chronic exercise; topics include pulmonary and cardiovascular physiology, training and detraining, and special topics.

Prerequisite: KINE 433 or equivalent.**KINE 639 Exercise Electrocardiography****Credits 3. 3 Lecture Hours.**

Electrocardiography (ECG) for the exercise scientist; emphasis on recognition and interpretation of normal and aberrant ECG patterns encountered during the graded exercise test; physiologic mechanisms underlying the normal and abnormal ECG.

Prerequisites: KINE 638 and 648 or approval of instructor.**KINE 640 Motor Neuroscience II****Credits 3. 3 Lecture Hours.**

Contemporary theories of motor learning that link behavioral analysis to underlying neural correlates of control; topics include memory; physical, mental and observational practice; internal models, motor planning-programming; and self-organization in perception-action systems; emphasis on cognitive and behavioral neuroscience.

Prerequisite: KINE 406 or equivalent.**KINE 641 Motor Neuroscience: Development Issues****Credits 3. 3 Lecture Hours.**

Explores the contemporary developmental issues associated with motor behavior (perception to action) across the lifespan; topics include physical and neurological growth, perception, motor control, and environmental influence.

Prerequisite: KINE 307 or equivalent.**KINE 642 Self-organization in Motor Neuroscience****Credits 3. 3 Lecture Hours.**

Application of the concepts of non-linear dynamical systems theory and self-organization to the study of biological motion and learning; topics include perception-action coupling, phrase transitions and stability, sensori-motor transformations.

Prerequisites: KINE 406 and KINE 641.**KINE 646 Fundamentals of Space Life Sciences****Credits 3. 3 Lecture Hours.**

Integrates nutrition, physiology, and radiation biology to define major biological problems in long duration space flight; provide an overview of the problems of bone loss, muscle wasting, and radiation-enhanced carcinogenesis along with potential countermeasures; focus on nutritional interventions and exercise protocols.

Cross Listing: NFSC 646 and NUEN 646.**KINE 647 Instrumentation and Techniques in Exercise Physiology I****Credits 2. 1 Lecture Hour. 3 Lab Hours.**

Theory, experiments and demonstrations in exercise physiology; laboratory experience in the use of metabolic and biochemical instrumentation commonly found in a modern exercise physiology laboratory.

Prerequisite: Concurrent enrollment in KINE 637.**KINE 648 Instrumentation and Techniques in Exercise Physiology II****Credits 2. 1 Lecture Hour. 3 Lab Hours.**

Theory, experiments and demonstrations in exercise physiology; laboratory experience in the use of metabolic and biochemical instrumentation commonly found in a modern exercise physiology laboratory. A continuation of KINE 647.

Prerequisite: KINE 637 or concurrent enrollment.**KINE 649 Applied Exercise Physiology****Credits 3. 3 Lecture Hours.**

Investigate how the acute physiological responses to exercise and the chronic physiological adaptations to exercise training are altered by environmental factors—heat, cold, altitude, and microgravity, and by age and sex; addresses the physiological bases for reducing the risk of cardiovascular, metabolic and bone disease through physical activity.

Prerequisite: KINE 433 or equivalent.**KINE 651 Introduction to Human Clinical Research****Credits 3. 3 Lecture Hours.**

Fundamentals of initiating and conducting a human clinical research; topics include subject recruitment and (medical) screening, clinical study design, preparations and procedures; federal and institutional policies, budget, role of pharmacy and laboratory in clinical research.

Prerequisites: Graduate classification in Biomedical Sciences, Kinesiology, Nutrition, Health Science Center, College of Engineering, College of Science, or approval of instructor.**KINE 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussions of topics of current interest in kinesiology.

KINE 682 Seminar in...**Credit 1. 1 Other Hour.**

Reports and discussions of topics of current interest in kinesiology. Students may register in up to but not more than four sections of this course in the same semester.

KINE 683 Practicum in Kinesiology**Credits 3. 3 Other Hours.**

Observation and study of rehabilitation and kinesiology programs in schools and other institutions. May be repeated twice for credit.

Prerequisite: Approval of department head.**KINE 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

Supervised experiences in application of formal training to performing professional functions consistent with career goals.

Prerequisites: 12 semester hours of selected graduate work; approval of department head.**KINE 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Directed study of selected problems in kinesiology not related to thesis. May be repeated for credit.

Prerequisite: Approval of department head.**KINE 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of kinesiology. May be repeated for credit.

Prerequisite: Approval of department head.**KINE 690/HLTH 690 Theory of Research in Discipline****Credits 3. 3 Lecture Hours.**

Theory and design of research problems and experiments in various subfields of the discipline; communication of research proposals and results; evaluation of current research of faculty and students and review of current literature. May be repeated for credit.

Cross Listing: HLTH 690/KINE 690.**KINE 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of committee chair.

LAND - Landscape Architecture

LAND 601 Landscape Architectural Design Theory and Application I

Credits 5. 2 Lecture Hours. 9 Lab Hours.

First design studio course for career-change students; basic theories, principles, applications of landscape architectural design; design process; context-sensitive design; evidence based design; form-making skills; form-function-meaning relationships; spatial scale and dimensions; elements of natural and built environments; behavioral, psychosocial, policy and ecological factors in design; communication of design ideas.

Prerequisites: Graduate classification and approval of instructor.

LAND 602 Landscape Architectural Design Theory and Application II

Credits 5. 2 Lecture Hours. 9 Lab Hours.

Application of ecological concepts to site planning and site design, form and space making using natural features, and practical issues including social and political, technological and economic influences on ecological design.

Prerequisites: LAND 601.

LAND 603 Principle, Procedures and Techniques of Land Use

Credits 6. 2 Lecture Hours. 12 Lab Hours.

A continuation of LAND 601-602 sequence for career-change students; resolution of land problems that typically occur on a site; exploration of land use planning concepts and landscape ecology techniques; application of knowledge and skills acquired during the first year to a complex land development studio project.

Prerequisites: LAND 602 and approval of instructor.

LAND 612 Landscape Architectural Site Engineering and Development

Credits 4. 2 Lecture Hours. 6 Lab Hours.

First construction studio course; concepts, theories and techniques of site development; aspects of site engineering and consideration of earth bound elements in land development; contours, landform, grading design, drainage principles, cut and fill computations, basic hydraulics and hydrology, stormwater management, landscape construction materials.

Prerequisite: Approval of instructor.

LAND 614 Landscape Architectural Construction

Credits 3. 2 Lecture Hours. 4 Lab Hours.

Second construction studio course; sustainable water management techniques in landscape development; theory, principles and techniques of low impact development; basic elements of landscape architectural construction; construction document preparation, working drawings, project layout and design; theory and principles of irrigation and lighting design. Field trips required.

Prerequisite: LAND 612.

LAND 620 Open Space and Land Use Planning I

Credits 5. 2 Lecture Hours. 9 Lab Hours.

Creation of land use planning strategies for large land parcels; site inventory, analysis program formulation and design detailing sequenced into the production of a comprehensive master plan; consideration of issues in sustainability, environmental protection, growth management and resource utilization.

Prerequisite: LAND 601, LAND 602, LAND 603 or approval by instructor.

LAND 621 Open Space and Land Use Planning II

Credits 5. 2 Lecture Hours. 9 Lab Hours.

Projects with various scales; site selection, program formulation, theory, master planning and detailed design applied to topics of community design and development, and healthy communities; evidence based design methodology, techniques of professional design documentation and presentation.

Prerequisite: LAND 620 or approval by instructor.

LAND 622/PLAN 622 Critical Place Studies: Theory, Research and Practice

Credits 3. 3 Lecture Hours.

Introduction to historic preservation regulations; ethnographic and archival research methods, cultural landscape identification and documentations strategies, and critical theories; application of digital humanities tools and platforms to preservation practice and outreach to communities.

Cross Listing: PLAN 622/LAND 622.

LAND 630 Development of Landscape Architecture

Credits 3. 3 Lecture Hours.

Overview of the history of human settlement, land use and landscape architecture outside of North America.

Prerequisite: Graduate classification.

LAND 632 Design for Active Living

Credits 3. 3 Lecture Hours.

Understanding the forms and characteristics of the built environment and the influence on human behaviors, lifestyles and health; theoretical and empirical insights into the issues of physical activity, obesity, and automobile dependency; focus on how changes in the built environment help address these issues.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: ARCH 673 and PLAN 632.

LAND 635/PLAN 635 Concepts in Ecological Planning and Design

Credits 3. 3 Lecture Hours.

Reviews selected ecological concepts and explores integration into ecological/landscape planning, design using a historical perspective; historical and contemporary approach to provide and in-depth understanding of how they can better mediate between human actions and natural process.

Prerequisite: Graduate classification.

Cross Listing: PLAN 635/LAND 635.

LAND 640 Research Methods in Landscape Architecture

Credits 3. 3 Lecture Hours.

Research methods including theory, hypothesis formulation, design, data collection, measurement and report writing; equates research activity to landscape architecture and the interaction between people and their physical environment.

Prerequisite: LAND 603 or equivalent.

LAND 645 Practice Diversity in Landscape Architecture

Credits 3. 3 Lecture Hours.

An exploration of the diversity of practice opportunities within the profession of Landscape Architecture; individual roles within those areas of practice and the skills required to function successfully within them.

Prerequisites: Graduate classification and approval of instructor.

LAND 646 Professional Practice

Credits 3. 3 Lecture Hours.

Introduction to the procedures, management and ethical frameworks in which professional landscape architectural practice occurs; topics include forms of practice, employment issues, proposal preparation, fee and contract structures, project management, roles of the landscape architect, presentations and public participation, legal and ethical responsibilities.

Prerequisites: Graduate classification and approval of instructor.

LAND 655 Landscape Architectural Communication**Credits 3. 2 Lecture Hours. 4 Lab Hours.**

Graphic communication techniques required to expand landscape architectural concepts and designs including plan graphics, analysis and inventory graphics, perspective drawings, sketch composition, rendering media, color scanning, use of software and desktop.

LAND 661 Visual Quality for Design and Planning**Credits 3. 3 Lecture Hours.**

Emphasis on social science perspectives for analyzing visual quality in built and natural landscapes, and effects of visual surroundings on human well-being and health; the content reflects a balance of theory, scientific research evidence and practical applications in areas of landscape architecture, architecture, urban planning and park design.

Prerequisite: Graduate classification.**LAND 681 Seminar****Credit 1. 1 Lecture Hour.**

Analysis and criticism of selected landscape architectural projects. Lectures, reports and discussions.

Prerequisite: Graduate classification in landscape architecture.**LAND 684 Professional Internship****Credits 1 to 8. 1 to 8 Other Hours.**

LAND 684 is sequenced for graduation; must be completed prior to the final year of advanced study in the summer; student is required to take a work position in an approved office for a minimum of ten weeks at forty hours/week.

Prerequisite: Approval of faculty.**LAND 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Advanced study in an individual landscape architecture course with a selected faculty member; focus on a topic mutually derived by the student and faculty member; requires the production of a professional response solution.

Prerequisite: Approval of faculty.**LAND 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of landscape architecture. May be repeated for credit.

Prerequisite: Approval of instructor.**LAND 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for and preparation of dissertation.

Prerequisite: Doctoral classification.**LAND 693 Professional Study****Credits 1 to 23. 1 to 23 Other Hours.**

Terminal studio to be taken by the qualified master of landscape architecture candidate; requires preparation of a proposal describing the topic, an outlined method, procedures and timeline to be submitted to committee; approved and completed study requires a defense and separate public presentation.

Prerequisite: Approval of landscape architecture faculty.

LAW - Law

LAW 601 Civil Procedure**Credits 4. 4 Lecture Hours.**

Rules and doctrines that define the process of civil litigation in American courts; primary emphasis on the U.S. Constitution, federal judicial code and Federal Rules of Civil Procedure; topics may include the jurisdiction and competence of courts, conflicts between state and federal law, pleading, discovery, joinder of claims and parties, disposition without trial, trial and post-trial process, appellate review, and the effects of judgment.

LAW 602 Constitutional Law**Credits 4. 4 Lecture Hours.**

Provisions in the U.S. Constitution governing the form of government and powers of the federal judiciary, legislature and executive; relations between the federal government and states; limitations on governmental power over individuals inherent in constitutional provisions relating to due process and equal protection; restrictions on private action mandated or permitted by these constitutional provisions.

LAW 603 Contracts**Credits 4. 4 Lecture Hours.**

Enforceability of promises; creation of contractual obligations; performance and breach; impact of the contract on the legal relationships of nonparties; examination of contract doctrine in personal service, sales of goods and construction contracts.

LAW 604 Criminal Law**Credits 4. 4 Lecture Hours.**

Examination of the sources and goals of criminal law; concepts of actus reus and mens rea; characteristics of specific offenses; inchoate crimes; accomplice liability; general defenses.

LAW 605 Property**Credits 4. 4 Lecture Hours.**

Introduction to personal property and real property laws; estates and future interests in land; landlord-tenant problems; issues relating to private and public land use.

LAW 606 Torts**Credits 4. 4 Lecture Hours.**

Basic principles of civil liability for harm to persons or property; includes intentional torts, negligence, strict liability, defenses, and damages; additional topics may be included.

LAW 607 Business Associations I**Credits 3. 3 Lecture Hours.**

Basic principles of varying business entities used to conduct ventures for profit; fundamental agency principles, partnerships, limited liability companies, and corporations; how business organizations are formed; powers and responsibilities of their respective partners, members, officers or directors; shareholder's rights and liabilities; primary focus on corporation and corporate law; includes pre-incorporation issues, the corporate formation process, and corporate capital and financing; business entity taxation concepts may be covered as well; foundational and practical knowledge of how business organizations work; assessing which type of business organization is best suited for a particular client's objectives; legal formalities necessary in forming said organization; understanding the rights, duties and obligations for those affiliated.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 608 Business Associations II**Credits 3. 3 Lecture Hours.**

Further examination of corporate law beyond basic concepts studied in LAW 7056; rules and legal principles that govern large corporations and their constituents; mergers and acquisitions; issuance of corporate debt; executive compensation; the proxy solicitation process; shareholder proposals and other mechanisms of shareholder democracy; indemnification of officers and directors; corporate charitable giving and political speech; role of Special Litigation Committees in derivative suits; securities law related issues such as securities fraud, insider trading, and ethical issues in the representation of public corporations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7056 or Business Associations (four credit-hour course offered prior to fall 2013).

LAW 609 Criminal Procedure**Credits 3. 3 Lecture Hours.**

Issues relating to constitutional constraints on the investigation and prosecution of criminal offenses.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 610 Wills and Estates**Credits 3. 3 Lecture Hours.**

Principles of testate and intestate succession; drafting, execution and construction of attested and holographic wills; testamentary capacity, undue influence and fraud; revocation of wills; distribution of intestacy; nonprobate transfers of property; ethical issues that arise during estate planning; significant focus on Texas law.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 611 Evidence**Credits 4. 4 Lecture Hours.**

Examination of the problems of proof; study of the admission and exclusion of evidence on the basis of relevancy, policy and protection of the individual or state; examination of witnesses; substitutes for evidence; procedural considerations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 612 Professional Responsibility**Credits 3. 3 Lecture Hours.**

Rules regulating the practice of law.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 613 Advanced Torts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Advanced topics of tort law based on material covered in LAW 7042; includes products liability, defamation, invasion of privacy and business torts; misrepresentation and interference with contractual relations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7042.

LAW 614 Principles of Secured Transactions**Credits 1 to 3. 1 to 3 Lecture Hours.**

Examination of the rules governing transactions in which personal property is used as collateral to secure an obligation; primary source of authority is Article 9 of the Uniform Commercial Code and introduction to certain provisions of the U.S. Bankruptcy Code; addresses not only the rights of the debtor and creditor inter se but also the rights of third parties with an interest in the collateral.

LAW 615 Accounting for Lawyers**Credits 2 to 3. 2 to 3 Lecture Hours.**

Fundamental understanding of accounting principles; importance of accounting issues to the practice of law; introduction to critical techniques of financial analysis, including time value of money, leverage, return metrics and business valuation.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 616 Administrative Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of the legal principles and procedures an unelected bureaucracy must conform to achieve legitimacy; problems inherent in a relatively disunited body of law derived from disparate sources; concentration on the Constitution and other federal law as the primary sources of organizing principles for administrative law and procedure; topics may include constitutional underpinnings of the federal bureaucracy, judicial review of agency fact finding and legal interpretation, extra-statutory administrative common law, grounds for dividing administrative actions into adjudication and rule making, essential components of due process in agency adjudication, and availability of judicial review of agency action.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 617 Adoption Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Aspects of adoption law; consent of birthparents; termination of parental rights; Indian Child Welfare Act; transracial and transcultural adoption; international adoption; access to information; effects of adoption; actions for wrongful adoption.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 618 Ethics for the Criminal Law Practitioner**Credits 1 to 2. 1 to 2 Lecture Hours.**

Unique ethical and moral dilemmas that arise in criminal law from both defense counsel and prosecutor perspectives; bridging the gap between traditional substantive professional responsibility and the application of criminal law practice standards; problem-solving approach.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021.

LAW 619 Agency and Partnership**Credits 2. 2 Lecture Hours.**

Study of common law of principal and agent; law of unincorporated business entities, including general and limited partnerships and limited liability companies.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 620 Antitrust**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the major contours of U.S. antitrust law; focus on issues likely encountered in practice; includes private litigation, analysis of pricing systems and distribution plans and the relationship of antitrust law to economics and other bodies of law.

LAW 621 Patent Litigation**Credits 2. 2 Lecture Hours.**

Protecting patent claims from infringement; how the patent system works; emphasis on biggest issues most likely to encounter in a variety of practices; integration of materials from the 2013 America Invents Act.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 622 Principles of Intellectual Property**Credits 1 to 3. 1 to 3 Lecture Hours.**

Examination of the various types of intellectual property protection available under United States law; primary sources of authority are The Patent Act (35 U.S.C. §§ 101, et seq.), The Lanham Act (15 U.S.C. §§ 1051, et seq.) and The Copyright Act of 1976 (17 U.S.C. §§ 101, et seq.); discussion of the Manual of Patent Examining Procedure, The Trademark Manual of Examining Procedure, Compendium of U.S. Copyright Office Practices (Third Edition), Chapter 37 of the Code of Federal Regulation, The Copyright Act of 1909, the Defend Trade Secrets Act of 2016 (18 U.S.C. §§ 1836, et seq.), state law regarding rights of publicity and state trademark law; addresses various ways individuals and companies can obtain intellectual protection and enforce intellectual property rights.

LAW 623 Bankruptcy**Credits 3. 3 Lecture Hours.**

Study of law relating to individual and business liquidations; reorganizations under the Bankruptcy Code.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7032.

LAW 624 Children and the Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Exploration of the three-sided relationship between children, their parents (or other conservators), and the state; examination of complex problems inherent in the questions of when a state should, must, or should not interfere in the parent-child relationship; defining what that relationship includes and the ways it is evolving in the United States today; examination of the parent-child relationship through the many forms of Suits Affecting the Parent-Child Relationship (SAPCR), common to most states today in their statutes/codes; excludes questions of tort liability of parents to or for their children.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 625 Civil Rights Litigation**Credits 3. 3 Lecture Hours.**

Federal claims against local or state officials alleging violations of the U.S. Constitution; relevant to lawyers representing school districts, prisons, law enforcement and state government agencies as well as individuals served by these entities.

LAW 626 Trusts and Fiduciary Responsibilities**Credits 2 to 3. 2 to 3 Lecture Hours.**

Comprehensive study of the law of trusts: includes creation, administration, amendment and termination of trusts; powers, rights and duties of settlors, trustees and beneficiaries; fiduciary duties and liability of trustees; creditors rights; emphasis on Texas law.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 627 Complex Litigation**Credits 2 to 3. 2 to 3 Lecture Hours.**

A study of the procedural rules and doctrines relating to the litigation of complex cases involving multiple parties and/or claims. Particular emphasis will be placed on the Federal Rules of Civil Procedure that relate to class action litigation, joinder of parties and claims, and transfer and consolidation of action.

LAW 628 Conflict of Laws**Credits 2 to 3. 2 to 3 Lecture Hours.**

A study of legal problems arising when a legal dispute touches more than one state; topics include choice of law, jurisdiction over the parties, and the recognition and enforcement of foreign judgements and decrees in situations involving torts, contracts, property, marriage, divorce, and various procedural problems.

LAW 629 Construction Law**Credits 2. 2 Lecture Hours.**

Examination of construction law and legal relationships; causes of action between owners, contractors, subcontractors, engineers, architects and their insurers, and construction contracts; emphasis on practical aspects of construction practice; reenactment of real construction dispute cases.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 630 Consumer Law**Credits 2. 2 Lecture Hours.**

Current state of the law as it applies to consumer transactions; debt collection practices; credit disclosure and regulation; product liability; the Texas Deceptive Trade Practices Act; work of the Federal Trade Commission; truth in lending laws; fair credit laws.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 631 Copyright**Credits 3. 3 Lecture Hours.**

Study of federal and international laws protecting the innovative endeavors of authors; history of copyright law; fair use of copyrighted materials; what can be copyrighted; interaction of copyright law with other concepts of unfair competition and intellectual property.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 632 Advanced Criminal Procedure**Credits 2 to 3. 2 to 3 Lecture Hours.**

Critical analysis of processes, other than trials, used in the U.S. criminal justice system to resolve criminal cases; includes plea bargaining, therapeutic justice, restorative justice and juvenile justice; examination of the policy goals supporting continuing, starting or expanding the use of these processes to resolve criminal cases.

LAW 633 Art Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to legal practice known as art law; examination of legal and ethical issues relating to the creation, discovery, ownership, transfer and use of works of visual art, from ancient to contemporary; stakeholders include artists and their subjects, individual and corporate collectors, museums, dealers, auction houses, cultural institutions, treasure hunters, scholars, indigenous groups, sovereign nations, and the general public; examination, discussion, and debate of applicable civil and criminal laws and regulations, case law, international treaties and codes of ethics, as well as contracts and other documents used in art law practice.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 634 Advanced Copyright Law**Credits 3. 3 Lecture Hours.****LAW 635 Post-Conviction Actual Innocence Claims****Credits 2. 2 Lecture Hours.**

Practical applications of the law in petitioning the judiciary for relief based on facts garnered through an initial post-conviction investigation; understanding a post-conviction claim of actual innocence; how the U.S. Supreme Court and the Texas Court of Criminal Appeals have analyzed and dealt with such claims in both death penalty and nondeath cases.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021.

LAW 636 Internet Law**Credits 3. 3 Lecture Hours.**

Examination of transference or absence of brick-and-mortar legal principles to new methods of communications; recent developments in cyberspace law; survey of legal issues on the internet; policy and pragmatic application of jurisdictional principals; intellectual property laws; privacy rights; computer crime; proprietary information; freedom of speech issues; full-scale analysis and explication of the question "Is Google really God?"

Prerequisite: One year of law school in the full-time or part-time program.

LAW 637 Education Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Dynamics of the legal rights, responsibilities and relationships between parents, students, teachers and administrators; understanding the balance between these rights and the smooth, efficient operation of schools; separation of church and state; the instructional program and the balance between the substantive rights of parents and the compelling interest of the state in educating children; student on-campus First Amendment expression rights; student privacy rights; application of the Fourth Amendment; rights of students with disabilities; common law student rights; teacher certification requirements; contractual issues arising from employment relationships.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7010.

LAW 638 Employment Discrimination**Credits 3. 3 Lecture Hours.**

Examination of federal law concerning discrimination in employment on the basis of race, sex, religion, national origin, age, and disability; includes Title VII of the Civil Rights Act of 1964, the Age of Discrimination in Employment Act, the Reconstruction Era Civil Rights Act, the Equal Pay Act, the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 639 Employment Law**Credits 3. 3 Lecture Hours.**

Study of law of employer-employee relations in a nonunion context; examination of issues such as employment at will, retaliatory discharge, and wage and hour laws; introduction to employment relationship laws.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 640 European Union Law**Credit 1. 1 Lecture Hour.**

Examination of the EU's multilevel system of governance, its principles of law, and the reach of its powers, both economic and political; includes the free movement of goods and people, and the EU's power in the global trade and development.

LAW 641 Legal Research for Clients**Credits 1 to 3. 1 to 3 Lecture Hours.**

Initiation of the non-lawyer professionals in legal research authorities and information available in commercial electronic legal resources, including Westlaw, Lexis Advance and Bloomberg Law and in free electronic legal resources used by lawyers.

LAW 642 Entertainment Law**Credits 2. 2 Lecture Hours.**

Examination of basic legal concepts that govern transactions in the entertainment industry; constitutional protections of entertainment speech; the rights of individuals who restrict it; copyright fundamentals; contract issues peculiar to the field; prevailing standards and practices of "the Business."

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 643 Advanced Alternative Dispute Resolution**Credits 2. 2 Lecture Hours.****LAW 644 Environmental Law****Credits 3. 3 Lecture Hours.**

Study of various approaches for dealing with adverse environmental effects, including private litigation, regulation, and financial incentives; survey of air and water pollution, solid and hazardous waste problems, and the National Environmental Policy Act; judicial review of legislative and administrative action; special problems raised by the U.S. federal form of government; administrative regulatory process in pollution control.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 645 Estate and Gift Tax**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of income, gift, estate, and generation-skipping transfer taxes relevant to the estate planning process; introduction to planning and drafting principles for complex estates.

Prerequisite: One year of law school in the full-time or part-time program; LAW 7076 or concurrent enrollment.

LAW 646 Family Law**Credits 3. 3 Lecture Hours.**

Study of legal problems related to the establishment, dissolution, reorganization, and evolving definitions of the family and family-like relationships in America; includes premarital arrangements, marriage (formal and informal), divorce, parent-child relationship, division of marital property, spousal and child support, domestic violence within the family, and same-sex unions. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 647 Federal Courts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the constitutional and practical doctrines that define the judicial power of the U.S.; particular emphasis on the role of federal courts in the American system of government; the federal courts' relationship to the other branches of the federal government and their relationship to the separate state systems of government; includes constitutional cases and controversies requirement, congressional control of the federal courts, Supreme Court review of state court decisions, the power of the federal courts to create federal law, abstention, suits against state governments, and the enforcement of federal rights.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 648 Agricultural Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of major areas of agricultural law; practical approach including discussions and hands-on assignments; legal issues relating to animal agriculture, food safety, landowner rights, the interaction between agriculture and energy production, agricultural leases, agricultural policy and estate and succession planning for farm families.

Prerequisite: One year of law school in full-time or part-time program.

LAW 649 Due Diligence for the Professional**Credit 1. 1 Lecture Hour.**

Practical skills in performing due diligence in business and financial transactions; analyze documents such as financial statements to uncover red flags for fraud; receive a certification from the International Organization of Due Diligence.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 650 Non-Profit Organizations**Credits 2 to 3. 2 to 3 Lecture Hours.**

Laws, policies, and ideals affecting the creation, operation, and governance of nonprofit organizations; complex issues raised from nonprofit organizations' role in society involving constitutional, trust and property, corporate, and tax law; obtaining tax-exempt status; restrictions on lobbying and political activity; tax on unrelated business income; eligibility for charitable contributions; state regulation of charitable solicitations; oversight of nonprofit governance; charitable immunity.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 651 Criminal Procedure Trial Rights**Credits 3. 3 Lecture Hours.**

Constitutionally mandated judicial processes for determining the guilt or innocence of those accused of crime and selecting an appropriate penalty; topics may include bail and pretrial detention, the prosecutor's charging decision, pretrial publicity, the defendant's competency to stand trial, jury selection, trial by jury, the defendant's right of confrontation and compulsory process, the right to effective assistance of counsel, sentencing, direct attacks on criminal convictions, and double jeopardy.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 652 Gender and the Law**Credits 3. 3 Lecture Hours.**

Exploration of the historical, comparative, statutory, and especially constitutional dimensions of law's regulation of sexuality and gender; primarily case law, supplemented with statutory law and articles; topics include the critiques and defenses of marriage; the legal and social implications of categories such as bisexuality, intersexuality, and transsexuality; the relationship between feminist, gay and queer politics; and the impact of sexual orientation and gender challenges on the workplace, military policy, family law, and education.

LAW 653 First Amendment**Credits 3. 3 Lecture Hours.**

Study of the U.S. Constitution's First Amendment; addresses the First Amendment's effect on government attempts to regulate content of speech and to restrict speech by regulating one's method of speaking; the right of free speech in various physical settings; freedoms of assembly and press, free exercise of religion, and the prohibition on governmental establishment of religion.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7010.

LAW 654 Government Contracts**Credits 2. 2 Lecture Hours.**

Examination of federal government contract law; includes contract formation issues, appropriations requirements, contract types, simplified, sealed bid and negotiated procurement methods, competition requirements, contract pricing, protests of awards, contract administration issues and changes, terminations, claims and litigation in federal forums, government fraud remedies and contractor debarments.

LAW 655 Health Law**Credits 3. 3 Lecture Hours.**

Key concepts in health law, such as the structure of health care organizations, quality of health care, and liability of health care providers; access to health care; financing mechanisms of health care, including Medicare and Medicaid; regulation and oversight of managed health care; examination of developments in health care law concerning reproduction, bioethics, and human genetics.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7042.

LAW 656 Federal Income Taxation**Credits 3. 3 Lecture Hours.**

Study of the basic principles of federal income tax; concentration on individuals, businesses, and investors as taxpayers; use of the Internal Revenue Code and federal tax regulations emphasized.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 657 Health Care, Technology and the Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to legal issues that healthcare businesses encounter when using technology to enhance the patient-physician experience; examination of the regulation of patient privacy and security, medical software and mobile applications, electronic medical records, robotic surgery, fraud and abuse, corporate practice of medicine and use of the Internet to deliver medicine across state lines.

Prerequisite: One year of law school in full-time or part-time program.

LAW 658 Immigration Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Basic immigration statutes, including cases and doctrines that control immigration and naturalization; explores the treatment of undocumented immigrants and those seeking protection from persecution.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 659 Water Law**Credits 3. 3 Lecture Hours.**

Legal control of water resources; includes riparian rights, the water permit system, groundwater issues, water as a regional and shared resource, beneficial uses versus waste, underground conservation districts, and navigability.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 660 Intellectual Property Licensing Practicum**Credits 2. 2 Lecture Hours.**

Addresses issues raised by licensing intellectual property; motivations for licensing; types of agreements used in licensing transactions; provisions commonly used in licensing contracts; practical scenarios applied in class; grades based on class participation and presentations, in-class exercises, role-plays and written assignments.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7203, LAW 7350, LAW 7452, or LAW 7550.

LAW 661 Intellectual Property Survey**Credits 3. 3 Lecture Hours.**

Overview of the basic principles of intellectual property law; includes coverage of trade secret, trademark, patent, and copyright fundamentals.

Prerequisite: One year of law school in the full-time or part-time program; 28 completed hours.

LAW 662 International Intellectual Property**Credits 2 to 3. 2 to 3 Lecture Hours.**

Presents a study of the international fabric of patent, copyright, and trademark law under both domestic laws and international treaties. Students will examine the foundation of international intellectual property policies underlying medicinal herbs, counterfeit goods, genetic material, and traditional knowledge; examines heightened tensions on international intellectual property law due to flow of information and content across borders; harmonizing diverse legal frameworks.

LAW 663 International Litigation**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of disputes touching more than one jurisdiction; includes selecting the proper forum, discovery, parallel law suits, choice of law, sovereign immunity, the recognition and enforcement of foreign judgments, and arbitration.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 664 Public International Law**Credits 3. 3 Lecture Hours.**

Introduction to key doctrines of international law; fundamental principles and doctrines related to the sources of and bases for international law and international jurisdiction; law governing treaties and state succession; topics may include the use of force, protection of human rights and international criminal issues.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 665 International Business Transactions**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the legal issues encountered in private international business transactions through international trade, exploitation of intellectual property rights and direct foreign investment; topics generally include the international sale of goods; bills of lading; letters of credit; government regulation of imports and exports; technology transfer and intellectual property protection; cross border taxation; forms of agreements, industrial works contracts, employment laws; forms and regulation of foreign direct investment; international corruption and the Foreign Corrupt Practices Act; examines how customary international law, treaties and free trade agreements play a role in these transactions.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7056 or Business Associations (four credit-hour course offered prior to fall 2013).

LAW 666 Copyright and New Media**Credits 3. 3 Lecture Hours.**

The effects and implications of copyrights law for new media; includes a thorough review of basic copyright law.

LAW 667 Legal Analysis and Writing for Clients**Credits 1 to 3. 1 to 3 Lecture Hours.**

Experiential survey of methods by which lawyers analyze issues in the U.S. common-law-system and of the documents produced in connection with such analysis, including memoranda, court filings and contracts; overview of effective management of legal series by empowering client-side perspective on the work that lawyers do.

LAW 668 International Human Rights**Credits 2. 2 Lecture Hours.**

Introduction to the legal, political, and cultural components of human rights law; evaluation of United Nations human rights treaties and analyze attempts to implement these treaties, both nationally and internationally; international system of justice and international judicial bodies; regional human rights systems, humanitarian law, and the laws of war; consideration of whether human rights are legal rights, with particular focus on the concepts of universality, religious traditions, and cultural values.

LAW 669 Local Government Law**Credits 2. 2 Lecture Hours.**

Study of Texas municipal governments and their relationship to state, county, and other governmental units, including the federal government; internal organization and structure; purposes and authority; police powers; governmental immunity; liability in contract and quasi-contract; authority of municipal corporations to regulate land use and other property rights; municipal liability for injury to property and people; and open government regulations.

LAW 670**Credits 3. 3 Lecture Hours.****LAW 671 International Environmental Law****Credits 3. 3 Lecture Hours.****LAW 672 Juvenile Justice****Credits 2 to 3. 2 to 3 Lecture Hours.**

Review of the juvenile's substantive and procedural rights.

LAW 673 Labor Law**Credits 3. 3 Lecture Hours.**

Study of the National Labor Relations Act and its implementation.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 674 Land Use Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of private and public means of controlling land use; emphasis on the areas of planning and zoning, including the emerging problem of exclusionary land use controls; includes subdivision controls, restrictive deed covenants, eminent domain proceedings, and urban renewal.

LAW 675 Pre-Suit Patent Litigation**Credits 1 to 2. 1 to 2 Lecture Hours.**

Exploration of issues patent litigators should consider prior to filing a complaint for patent infringement; includes the market for patent enforcement; substantive assessment of cases; valuation of cases and economics of patent litigation; best practices for patent case assessment and pre-litigation ethical considerations; complaint drafting.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7452, LAW 7131, or LAW 7350.

LAW 676 Corporate Reorganization Law**Credits 3. 3 Lecture Hours.**

Problems of an insolvent business; focuses on chapter 11 of the Bankruptcy Code and tracks the progress of a debtor filing for relief under that chapter through confirmation of a plan of reorganization; comparison of alternative remedies, such as the out of court workout, and will study strategy and tactics that are used in practice; group role play of a typical chapter 11 case.

LAW 677 Energy Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to energy law and regulation in the United States; basic principles of public utility regulation; the division of jurisdiction between federal and state governments; key regulatory statutes and case law governing energy resources such as water, coal, oil, natural gas, nuclear and renewable energy; analysis of the environmental, regulatory, land use and economic concerns as they relate to each energy source; introduction to electricity and electric power competition in the United States.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 678 Special Problems in Corporate Law: Offshore Financial Transactions, Cayman Islands**Credits 2. 2 Lecture Hours.**

Combined classroom and field experience in the Cayman Islands including examination of international business, tax strategies, and related policy issues; goals motivating U.S. corporations to organize offshore business entities and policy and legal issues related to the use of such entities; interaction with professionals and policymakers from the Cayman Islands.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7057, LAW 7362, LAW 7516, or concurrent enrollment.

LAW 679 Law Practice Management**Credits 2. 2 Lecture Hours.**

Review of the professional, ethical, and management requirements for starting and operating a law practice; statutory and regulatory aspects of practice; labor and employment; partnerships and professional corporations; trust and IOLTA accounts; advertising and solicitations; management skills and technology related to time, billing, accounting, docketing, legal research, document preparation, filing, and client development.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 680 Legislation**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of the state and federal legislative systems; examination of the relationship between the legislative, executive, and judicial process; philosophies of legislative operations and judicial interpretation; statutory and constitutional issues involved in interpreting and applying legislation; principles of drafting legislation; tracking actual legislative sessions and introduced bills; activity of a student-selected member of choice in the Texas Legislature; conducting a mock session of the Legislature to include committee activity, floor debate, voting, and post-legislative activities via extracurricular meetings.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 681 Seminar**Credits 2. 2 Lecture Hours.**

Detailed reports on specific topics within the field of law.

LAW 682 Legislation and Regulation**Credits 3. 3 Lecture Hours.**

Introduction to the role of statutes and administrative regulations in the practice of law, including their creation, amendment, and interpretation; includes the interpretive and lawmaking roles of the three branches of government; statutory interpretation; delegation and administrative agency practice; regulatory governance; foundation for courses in legislation, administrative law, constitutional law and a wide range of specialized courses that rely on statutory and regulatory law including bankruptcy, commercial law, environmental law, intellectual property, securities regulation, and tax law.

LAW 683 Marital Property**Credits 3. 3 Lecture Hours.**

Study of the property rights of husband and wife under the Texas community property system, including coverage of the law relating to homestead.

Prerequisites: One year of law school in the full-time or part-time program; 28 completed hours.

LAW 684 Externship**Credit 1. 1 Lecture Hour.**

Learning opportunities provided through placements in approved legal settings; designed to increase understanding of the range of skills necessary for effective lawyering; improve abilities to perform lawyering skills (e.g., applying an area of law to an actual case); begin to identify and reflect upon the strengths and weaknesses as a practicing student attorney; develop productive working relationships with supervisors, clients, support staff, and peers; reflect on placement experiences through journals and class discussions; placement can be in either courts, public interest organizations, corporate or government offices, or law firms; timesheets and journals submitted every two weeks; classroom component consists of in-class meetings and online discussions. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 685 Independent Study**Credit 1. 1 Lecture Hour.**

Specialized reading or research in an area of interest under a full-time faculty member's supervision. May be repeated for credit.

Prerequisites: All lockstep courses.

LAW 686 Mergers and Acquisitions**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of legal issues related to corporate mergers and acquisitions; mechanics and structure of merger and acquisition transactions, shareholder rights, fiduciary duties, federal securities laws, accounting and tax issues, anti-takeover defenses and antitrust considerations.

LAW 687 National Security Law**Credits 3. 3 Lecture Hours.**

Examination of criminal and civil statutes, Supreme Court cases, executive orders and government policies that impact U.S. national security; relevant to prosecutors, criminal defense attorneys and lawyers representing state and federal agencies, law enforcement, technology companies, as well as individuals served by these entities.

LAW 688 Natural Resources Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

National Forest Management Act, the Clean Water Act, natural resource conservation acts, Wild and Scenic Rivers Act, the National Environmental Policy Act, and other acts and issues relating to the use, management, and preservation of natural resources.

LAW 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Special topics in identified areas of law. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 691 Research**Credits 0 to 4. 0 to 4 Other Hours.**

Research for thesis or dissertation.

LAW 694 Insurance Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of fundamental legal principles relating to the construction of various types of liability and first-party insurance contracts; includes insurance regulation, application for coverage and acceptance of risk, rules of construction, bad faith, and insurance litigation strategy.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 696 Oil and Gas**Credits 3. 3 Lecture Hours.**

Study of oil and gas law; interests that may be created in oil and gas; transfer and conveyance of such interests; rights of operators and landowners; provisions in the oil and gas lease; rights of assignees; regulations dealing with exploration, production, and conservation.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 698 Environmental Oil and Gas Law**Credits 2. 2 Lecture Hours.**

Exploration of federal, state, and local environmental laws that impact the oil and gas industry; current laws that apply to hydraulic fracturing activities as well as current studies and enforcement actions concerning the same; and analyzes typical claims and defenses asserted in recent hydraulic fracturing litigation.

Prerequisites: One year of law school in the full-time or part time program; LAW 7444.

LAW 699 Patent Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

The study of how proprietary interests in technology are protected by patent law, with a focus on issues relating to validity, the nature of the subject matter protected, and enforcement of proprietary rights.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 700 Payment Systems**Credits 3. 3 Lecture Hours.**

Exploration of commercial paper, bank deposits, and collections under UCC Articles 3 and 4; includes negotiability and the rights and obligations of parties to commercial paper, defenses to liability, relationship of banks and customers, check collection, and suretyship.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 7001 Analysis, Research, and Writing I**Credits 3. 3 Lecture Hours.**

Study of skills essential to law practice and the solution of legal problems; essential analytical skills; methods of legal research through hands-on library experience; two legal memoranda and a trial brief to be completed.

LAW 7002 Analysis, Research, and Writing II**Credits 3. 3 Lecture Hours.**

Analysis, Research, and Writing II. Study of skills essential to law practice and the solution of legal problems; essential analytical skills; methods of legal research through hands-on library experience; two legal memoranda and a trial brief to be completed.

LAW 7005 Civil Procedure**Credits 4. 4 Lecture Hours.**

Rules and doctrines that define the process of civil litigation in American courts; primary emphasis on the U.S. Constitution, federal judicial code and Federal Rules of Civil Procedure; topics may include the jurisdiction and competence of courts, conflicts between state and federal law, pleading, discovery, joinder of claims and parties, disposition without trial, trial and post-trial process, appellate review, and the effects of judgment.

LAW 7007 Alternate Dispute Resolution Survey**Credit 1. 1 Lecture Hour.**

Examination of law and ethics of mediation, relevant social psychology and economic theories and empirical research, dynamics, law and ethics of representing clients in mediation; focus on mandatory mediation, requirement to mediate in good faith, enforceability of mediated agreements, confidentiality and the mediation privilege, legal or mediation malpractice occurring in context of mediation, lawyers' and mediators' ethical obligations.

LAW 701 Preparing for the Bar Exam**Credits 2 to 3. 2 to 3 Lecture Hours.**

Overview of the contents of the bar exam; critical skills and strategies necessary for success on each day of the exam; covers selections from several MBE and essay-tested subjects; simulation of portions of the bar exam with performance feedback.

LAW 7010 Constitutional Law**Credits 4. 4 Lecture Hours.**

Provisions in the U.S. Constitution governing the form of government and powers of the federal judiciary, legislature and executive; relations between the federal government and states; limitations on governmental power over individuals inherent in constitutional provisions relating to due process and equal protection; restrictions on private action mandated or permitted by these constitutional provisions.

LAW 7017 Contracts**Credits 4. 4 Lecture Hours.**

Enforceability of promises; creation of contractual obligations; performance and breach; impact of the contract on the legal relationships of nonparties; examination of contract doctrine in personal service, sales of goods and construction contracts.

LAW 702 Real Estate Transactions**Credits 3. 3 Lecture Hours.****LAW 7021 Criminal Law****Credits 3 to 4. 3 to 4 Lecture Hours.**

Examination of the sources and goals of criminal law; concepts of actus reus and mens rea; characteristics of specific offenses; inchoate crimes; accomplice liability; general defenses.

LAW 703 Real Estate Financing**Credits 3. 3 Lecture Hours.**

Exploration of the basic elements involving real estate financing; understanding of the legal framework and practical considerations affecting real estate finance transactions; secured lending, mortgage law, installment land contracts, foreclosures, lien priorities, title insurance and practical issues when representing a lender or borrower on commercial or single family transactions; commercial leasing, ground leases and real estate development.

LAW 7032 Property**Credits 4. 4 Lecture Hours.**

Introduction to personal property and real property laws; estates and future interests in land; landlord-tenant problems; issues relating to private and public land use.

LAW 704 Remedies**Credits 2 to 3. 2 to 3 Lecture Hours.**

Review of the forms of legal and equitable relief a court is equipped to grant by way of redress to those who have been or may be injured; alternative choices and tactical advantages of each; may also cover the scope of judges' powers of contempt.

LAW 7042 Torts**Credits 4. 4 Lecture Hours.**

Basic principles of civil liability for harm to persons or property; includes intentional torts, negligence, strict liability, defenses, and damages; additional topics may be included.

LAW 705 Secured Transactions**Credits 3. 3 Lecture Hours.**

Study of personal and commercial financing by loans and credit sales under agreements creating security interests in the debtors' personal property (Article 9 of the UCC and relevant provisions of the Bankruptcy Code).

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7032.

LAW 7056 Business Associations I**Credits 3. 3 Lecture Hours.**

Basic principles of varying business entities used to conduct ventures for profit; fundamental agency principles, partnerships, limited liability companies, and corporations; how business organizations are formed; powers and responsibilities of their respective partners, members, officers or directors; shareholder's rights and liabilities; primary focus on corporation and corporate law; includes pre-incorporation issues, the corporate formation process, and corporate capital and financing; business entity taxation concepts may be covered as well; foundational and practical knowledge of how business organizations work; assessing which type of business organization is best suited for a particular client's objectives; legal formalities necessary in forming said organization; understanding the rights, duties and obligations for those affiliated.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 7057 Business Associations II**Credits 3. 3 Lecture Hours.**

Further examination of corporate law beyond basic concepts studied in LAW 7056; rules and legal principles that govern large corporations and their constituents; mergers and acquisitions; issuance of corporate debt; executive compensation; the proxy solicitation process; shareholder proposals and other mechanisms of shareholder democracy; indemnification of officers and directors; corporate charitable giving and political speech; role of Special Litigation Committees in derivative suits; securities law related issues such as securities fraud, insider trading, and ethical issues in the representation of public corporations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7056 or Business Associations (four credit-hour course offered prior to fall 2013).

LAW 706 Securities Regulation**Credits 3. 3 Lecture Hours.**

Review of federal and state regulation of the public distribution, offer, and sale of corporate securities; study of the Securities Act of 1933 and portions of the Securities Exchange Act of 1934; types of securities and underwriting techniques; key definitions and exemptions in the statutes; state securities law with emphasis on the securities registration and anti-fraud aspects of the Texas Securities Act.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7056 or Business Associations (four credit-hour courses offered prior to fall 2013).

LAW 7065 Criminal Procedure**Credits 3. 3 Lecture Hours.**

Issues relating to constitutional constraints on the investigation and prosecution of criminal offenses.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 707 Securities Law Enforcement**Credits 2. 2 Lecture Hours.**

Exploration of the SEC's enforcement of federal securities laws and related efforts by FINRA and the DOJ; introduction to how the SEC enforces federal securities laws; aspects of the enforcement process; investigative techniques; the Wells process; SEC's litigation efforts in both federal courts and administrative proceedings.

Prerequisites: One year of law school in full-time or part-time program; LAW 7056.

LAW 7076 Wills and Estates**Credits 3. 3 Lecture Hours.**

Principles of testate and intestate succession; drafting, execution and construction of attested and holographic wills; testamentary capacity, undue influence and fraud; revocation of wills; distribution of intestacy; nonprobate transfers of property; ethical issues that arise during estate planning; significant focus on Texas law.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 708 Taxation of Business Entities**Credits 3. 3 Lecture Hours.**

Study of the federal income tax treatment of C corporations and pass-through entities such as partnerships, S corporations, and limited liability companies; examines on a comparative basis the formation, operation, and sales and liquidation of these entities; corporate reorganizations and related transactions also covered.

LAW 7080 Evidence**Credits 4. 4 Lecture Hours.**

Examination of the problems of proof; study of the admission and exclusion of evidence on the basis of relevancy, policy and protection of the individual or state; examination of witnesses; substitutes for evidence; procedural considerations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 709 Alternative Dispute Resolutions**Credits 3. 3 Lecture Hours.****LAW 7091 Professional Responsibility****Credits 3. 3 Lecture Hours.**

Rules regulating the practice of law.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 710 Texas Criminal Procedure**Credits 3. 3 Lecture Hours.**

Study of laws regulating Texas criminal process; arrest to post-conviction review; emphasis on unique characteristics.

LAW 7101 Immigrant Rights Clinic**Credits 2 to 6. 2 to 6 Other Hours.**

Engagement in direct representation of immigrants before the Immigrant Courts, Board of Immigration Appeals and U.S. Courts of appeals on cases related to deportation defense, particularly for individuals in immigration detention, as well as affirmative filings for survivors of crimes and abuse; clients include asylum-seekers fleeing persecution in their home countries, permanent residents facing deportation due to a criminal conviction, unaccompanied children who have been abused, neglected or abandoned by a parent and undocumented individuals with substantial ties to the United States.

Prerequisites: Concurrent enrollment in LAW 7091.

LAW 7104 Advanced Torts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Advanced topics of tort law based on material covered in LAW 7042; includes products liability, defamation, invasion of privacy and business torts; misrepresentation and interference with contractual relations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7042.

LAW 7108 Accounting for Lawyers**Credits 2 to 3. 2 to 3 Lecture Hours.**

Fundamental understanding of accounting principles; importance of accounting issues to the practice of law; introduction to critical techniques of financial analysis, including time value of money, leverage, return metrics and business valuation.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 711 Texas Real Property**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of Texas real property law through Texas case and statutory law; includes conveyances of real property (including contracts and deeds), liens, adverse possession, and servitudes (i.e., easements, real covenants, and equitable servitudes).

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 7110 Professional Identity**Credits 0 to 2. 0 to 2 Lecture Hours.**

Development of skills in areas relating to everyday legal practice; including professionalism, leadership, interpersonal communication, teamwork, leveraging diversity, creating inclusive climates, cross-cultural and cross-generational lawyering, mentoring and public service.

LAW 7112 The Art of Lawyering**Credits 2 to 3. 2 to 3 Lecture Hours.**

Development and honing of analytic and problem-solving skills required for optimal success in law school, the bar exam, and law practice; completion of individual and small group practical assignments with detailed feedback to enhance law education.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7113 Administrative Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Legal principles and procedures an unelected bureaucracy must conform to achieve legitimacy; problems inherent in a relatively disunited body of law derived from disparate sources; concentration on the Constitution and other federal law as the primary sources for administrative law and procedure; may include constitutional underpinnings of the federal bureaucracy, judicial review of agency fact finding and legal interpretation, extra-statutory administrative common law, grounds for dividing administrative actions into adjudication and rule making, essential components of due process in agency adjudication, and availability of judicial review of agency action.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7114 Adoption Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Aspects of adoption law; consent of birthparents; termination of parental rights; Indian Child Welfare Act; transracial and transcultural adoption; international adoption; access to information; effects of adoption; actions for wrongful adoption.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7116 Low Income Tax Clinic**Credits 4 to 6. 4 to 6 Other Hours.**

Representation of clients before the Internal Revenue Service or in U.S. Tax Court to resolve disputes concerning federal tax liabilities; representations may include tax examinations (audits), administrative appeals, collection matters or tax litigation; interview and counsel clients; management of all aspects of client matters; instruction in substantive and procedural law, drafting and other core lawyering skills; opportunities to practice during class and clinic office hours; supervision provided by a licensed attorney.

Prerequisite: LAW 7091 or concurrent enrollment.

LAW 7117 Federal Tax Practice and Procedure**Credits 2. 2 Lecture Hours.**

Procedure and practical aspects of a tax practice, focusing primarily on all stages of a federal tax controversy; audits, appeals, litigations and collection; aspects of practice before an administrative agency and the professional/ethical obligations associated with tax transactional or controversy work.

Prerequisites: LAW 7002, LAW 7017, LAW 7021, and LAW 7309.

LAW 712 Texas Pretrial Procedure**Credits 3. 3 Lecture Hours.**

Texas law in civil cases pertaining to processes before trial; jurisdictions, venue, initiating legal proceedings, obtaining factual information from parties and nonparties, and terminating litigation prior to trial.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 7120 Ethics for the Criminal Law Practitioner**Credits 1 to 2. 1 to 2 Lecture Hours.**

Unique ethical and moral dilemmas that arise in criminal law from both defense counsel and prosecutor perspectives; bridging the gap between traditional substantive professional responsibility and the application of criminal law practice standards; problem-solving approach.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021.

LAW 7121 Advanced Clinic**Credits 2 to 4. 2 to 4 Other Hours.**

Continuation of same clinic after one semester; advanced skills in interviewing, counseling, dispute resolution, law practice management, legal drafting and other core lawyering skills; all other clinic hours in addition to class meeting times are determined in consultation with faculty supervisor.

Prerequisites: Approval of instructor.

LAW 7122 Agency and Partnership**Credits 2. 2 Lecture Hours.**

Study of common law of principal and agent; law of unincorporated business entities, including general and limited partnerships and limited liability companies.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7124 Core Commercial Concepts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Understanding the key concepts from the Uniform Commercial Code; critical provisions of Uniform Commercial Code Article 2 (Sales), Article 9 (Secured Transactions) and Articles 3 and 4 (Payment Systems).

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7032.

LAW 7127 Antitrust**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the major contours of U.S. antitrust law; focus on issues that will likely be encountered in practice; issues include private litigation, analysis of pricing systems and distribution plans and the relationship of antitrust law to economics and other bodies of law.

Prerequisite: LAW 7017.

LAW 713 Texas Trials and Appeals**Credits 3. 3 Lecture Hours.**

Texas law in civil cases pertaining to trial and appellate procedure concerning the jury; presentation of the case; motions for instructed verdict; the court's charge; the verdict; trial before the court; post-trial motions and procedures; final and appealable judgments; appellate jurisdiction; perfection of appeal; courts of appeal; Supreme Court of Texas; original proceedings in appellate courts.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 7131 Patent Litigation**Credits 2. 2 Lecture Hours.**

Protecting patent claims from infringement; how the patent system works; emphasis on biggest issues most likely to encounter in a variety of practices; integration of materials from the 2013 America Invents Act.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 714 Trademark and Unfair Competition Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Principles of unfair competition law; examination of the creation, maintenance, and enforcement of trademark rights; related doctrines of rights of publicity, trade dress, trade secrets, and false advertising; exploration of public policies and economy underlying trademark law.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7145 Bankruptcy**Credits 3. 3 Lecture Hours.**

Study of law relating to individual and business liquidations; reorganizations under the Bankruptcy Code.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7032.

LAW 715 Business Fundamentals for Lawyers**Credits 1 to 2. 1 to 2 Lecture Hours.**

Business concepts and processes important to law practice for business lawyers; financial statements, business strategy, supply chains, HR management, finance, and marketing operations; includes business problem simulations.

Prerequisites: One year in law school in the full-time or part-time program.

LAW 7154 Children and the Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Exploration of the three-sided relationship between children, their parents (or other conservators), and the state; examination of complex problems inherent in the questions of when a state should, must, or should not interfere in the parent-child relationship; defining what that relationship includes and the ways it is evolving in the United States today; examination of the parent-child relationship through the many forms of Suits Affecting the Parent-Child Relationship (SAPCR), common to most states today in their statutes/codes; excludes questions of tort liability of parents to or for their children.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7155 Fashion Law**Credits 1 to 2. 1 to 2 Lecture Hours.**

Overview of the legal issues related to the fashion industry; emphasis on the analysis of the intellectual property aspects for the protection of fashion items, primarily but not exclusively trademarks, design and copyright; addresses the business aspects of the fashion industry and some emerging issues including the growing movement of sustainable and slow fashion as well as the potential impact of disruptive technologies such as 3D printing on the manufacturing and distribution of fashion items.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 716 Sales and Leases**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of the sale and lease of goods and the principal commercial law governing such transactions; includes Articles 2 and 2A of the uniform Commercial Code as well as the United Nations Convention on Contracts for the International Sale of Goods; sale and lease contract formation; establishment of express and implied contract terms; creation and disclaimer of warranties; risk of loss; remedies for breach.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 7162 Civil Rights Litigation**Credits 3. 3 Lecture Hours.**

Federal claims against local or state officials alleging violations of the U.S. Constitution; relevant to lawyers representing school districts, prisons, law enforcement and state government agencies as well as individuals served by these entities.

LAW 717 White Collar Crime**Credits 3. 3 Lecture Hours.**

Exploration of the substantive and procedural problems connected with the federal prosecution and defense of white collar crime; examination of selected federal statutes, including the Racketeer-Influenced and Corrupt Organizations Act (RICO); mail and wire fraud, securities fraud, money laundering, corporate criminal liability, and grand jury investigations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021.

LAW 7174 Trusts and Fiduciary Responsibilities**Credits 2 to 3. 2 to 3 Lecture Hours.**

Comprehensive study of the law of trusts: includes creation, administration, amendment and termination of trusts; powers, rights and duties of settlors, trustees and beneficiaries; fiduciary duties and liability of trustees; creditors rights; emphasis on Texas law.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 7175 Transfer Pricing**Credits 2. 2 Lecture Hours.**

Addresses cross-border intracompany pricing as a multidisciplinary subject of law, accounting and economics in order to value cross-border tangibles, services and intangible transactions among units of a multinational enterprise; examination from a U.S. law perspective compared to OECD, UN and other country approaches, especially Brazil; includes arm's length standard, jurisprudence, comparability analysis, risk analysis for tangibles and intangibles, transactional methods (CUP, CUT, Cost Plus, Resale Minus, Commodity), profit methods, functional analysis, industry economic data gathering and analysis, cost-sharing arrangements, profit splits and residuals, platform contributions, safe harbors, documentation, advance pricing agreement procedures and mutual agreement procedures.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 718 Women & the Law**Credits 3. 3 Lecture Hours.**

Women & the Law. A study of legal issues that particularly affect women and how the law, in its choices regarding these issues, has helped to form women's position in American society. Issues discussed will include spousal abuse, rape, employment discrimination, marriage and divorce, child custody, reproductive rights, and privacy.

LAW 7188 Construction Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of construction law and legal relationships; causes of action between owners, contractors, subcontractors, engineers, architects and their insurers, and construction contracts; emphasis on practical aspects of construction practice; reenactment of real construction dispute cases.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 719 Elder Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Overview of the law relating to aging individuals and an older American society; includes employment and disability discrimination, retirement, property management, guardianship and protection, health care financing, health care decision-making, housing, and family issues unique to grandparents; Texas law on particular subjects covered when possible.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7193 Business Organizations and FCPA**Credit 1. 1 Lecture Hour.**

Exploration of root causes of why companies become the subject of Foreign Corrupt Practices Act (FCPA) scrutiny; examination of anti-bribery provisions, books, records and internal control provisions including the ability to identify legal risk and enforcement and financial consequences that can result from FCPA scrutiny.

Prerequisites: LAW 7017.

LAW 7195 Consumer Law**Credits 2. 2 Lecture Hours.**

Current state of the law as it applies to consumer transactions; debt collection practices; credit disclosure and regulation; product liability; the Texas Deceptive Trade Practices Act; work of the Federal Trade Commission; truth in lending laws; fair credit laws.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 7196 Case Evaluation and Client Relationships**Credit 1. 1 Lecture Hour.**

Practical, real life workshop that includes evaluation of a case and then maintaining the client relationship; case may be any new legal matter, whether transactional or litigation; obtaining the new case, evaluating the new case and then maintaining the client relationship throughout the case; includes rejecting a new case and why.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 7199 Trial Advocacy for Mock Trial Students**Credits 1 to 3. 1 to 3 Lecture Hours.**

Designed to teach mock trial team participants effective trial advocacy skills necessary to persuasively present a case to a decision maker; focus on the principles, concepts and rules of trial advocacy and evidence; facilitated by experienced litigators who will offer their insight into the realities of trial work.

Prerequisites: Approval of instructor.

LAW 720 Animal Law**Credits 2. 2 Lecture Hours.**

Overview of the changing relationship between society and animals; examination of the development of both civil and criminal law as it relates to animals; exploration of the philosophical issues that drive the law's evolution; describes the law as an expression of how we share the environment with animals.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7200 Moot Court Appellate Advocacy**Credit 1. 1 Lecture Hour.**

Substantial experience of engaging in tasks to help develop skills that will be utilized as advisors and advocates in litigation and appellate matters; designed to provide basic oral and writing skills required to effectively participate in a moot court competition.

Prerequisites: Approval of instructor.

LAW 7201 Arbitration**Credits 1 to 3. 1 to 3 Lecture Hours.**

Introduction to the arbitration process; examination of the legal framework governing arbitration, policy implications of its expansion and the skills necessary to be a successful advocate in domestic arbitral forms.

Prerequisites: LAW 7017 and LAW 7007.

LAW 7203 Copyright**Credits 3. 3 Lecture Hours.**

Study of federal and international laws protecting the innovative endeavors of authors; history of copyright law; fair use of copyrighted materials; what can be copyrighted; interaction of copyright law with other concepts of unfair competition and intellectual property.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7204 Advanced Criminal Procedure**Credits 2 to 3. 2 to 3 Lecture Hours.**

Critical analysis of processes, other than trials, used in the U.S. criminal justice system to resolve criminal cases; includes plea bargaining, therapeutic justice, restorative justice and juvenile justice; examines the policy goals supporting continuing, starting or expanding the use of these processes to resolve criminal cases.

Prerequisites: All lockstep courses except LAW 7010 and LAW 7065.

LAW 7205 Art Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to the growing area of legal practice known as art law; examination of legal and ethical issues relating to the creation, discovery, ownership, transfer and use of works of visual art, from ancient to contemporary; stakeholders include artists and their subjects, individual and corporate collectors, museums, dealers, auction houses, cultural institutions, treasure hunters, scholars, indigenous groups, sovereign nations, and the general public; examination, discussion, and debate of applicable civil and criminal laws and regulations, case law, international treaties and codes of ethics, as well as contracts and other documents used in art law practice.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7207 Borderlands Law - Contemporary Legal Issues Relating to the U.S.-Mexico Border**Credits 1 to 3. 1 to 3 Lecture Hours.**

Survey of contemporary legal issues relating to the U.S.-Mexico border; includes trade, transportation, business, banking, immigration, border security, crime, human rights, oil and gas, energy, water, the environment and the Mexican legal system.

Prerequisites: Approval of instructor.

LAW 7208 Art, Cultural Heritage and the Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

International and domestic legal issues and disputes pertaining to the creation, ownership, use and preservation of works of visual art and objects of cultural heritage.

Prerequisite: One year in law school in the full-time or part-time program.

LAW 721 Corporate Governance**Credits 2. 2 Lecture Hours.**

An advanced course dealing with the legal, financial, ethical, theoretical, and practical issues involved in the management and control of large publicly held business entities; may include discussions of various methods of corporate governance, including state corporate laws, federal securities laws, criminal laws, and stock exchange regulations, with particular focus on the complex relationships among shareholders, management, employees, and the public.

LAW 7217 Post-Conviction Actual Innocence Claims**Credits 2. 2 Lecture Hours.**

Practical applications of the law in petitioning the judiciary for relief based on facts garnered through an initial post-conviction investigation; understanding a post-conviction claim of actual innocence; how the U.S. Supreme Court and the Texas Court of Criminal Appeals have analyzed and dealt with such claims in both death penalty and nondeath cases.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021.

LAW 722 Guardianship Practicum**Credits 1 to 2. 1 to 2 Lecture Hours.**

Overview of Texas guardianship law; determination of need for guardianship, less restrictive alternatives to a guardianship and what alternatives entail; drafting applications and orders for a guardianship of the person and/or estate with supporting documents; drafting inventory, appraisements, list of claims, annual accountings, reports of attorneys or guardians ad litem and final accountings for guardianships of the estate; practical look at representation of an applicant for guardianship; representing the proposed incapacitated person.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7222 International Trade Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the impact of trade by providing an insight into the questions of Trade Policy; focus on trade agreements of the World Trade Organization; tariffs, subsidies and their effect on trade in goods and services.

Prerequisite: One year in law school in the full-time or part-time program.

LAW 7222S Advanced Dispute Resolution Survey: Negotiation, Mediation, and Arbitration**Credits 3. 3 Lecture Hours.**

Three main tools of Alternative Dispute Resolution including negotiation, mediation and arbitration; theoretical and practical aspects of all three tools.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7223 Internet Law**Credits 3. 3 Lecture Hours.**

Examination of transference or absence of brick-and-mortar legal principles to new methods of communications; recent developments in cyberspace law; survey of legal issues on the internet; policy and pragmatic application of jurisdictional principals; intellectual property laws; privacy rights; computer crime; proprietary information; freedom of speech issues; full-scale analysis and explication of the question "Is Google really God?"

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7225 Anti-Terrorism and Criminal Enforcement**Credits 2 to 3. 2 to 3 Lecture Hours.**

Federal criminal investigation and prosecution of anti-terrorism crimes; criminal law-related legislation dealing with terrorism; detention and adjudication-related issues; techniques of investigation and information-gathering methods used in anti-terrorism criminal enforcement; civil liberties implications.

Prerequisites: LAW 7021; one year in law school in the full-time or part-time program.

LAW 7227 Education Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Legal rights, responsibilities and relationships between parents, students, teachers and administrators; balancing these rights with the operation of schools; separation of church and state; balancing the instructional program with substantive rights of parents and the interest of the state; student on-campus First Amendment expression rights; student privacy rights; application of the Fourth Amendment; rights of students with disabilities; common law student rights; teacher certification requirements; contractual issues arising from employment relationships.

Prerequisites: LAW 7010; one year of law school in the full-time or part-time program.

LAW 7228 ePayments Law and Business**Credits 2. 2 Lecture Hours.**

Exploration of electronic payments with emphasis on the business models and legal superstructures that have facilitated the growth of ePayments in the digital age; electronic transfers of value and resolution of transactional disputes; evaluation of range of systems from established credit-and-debit card networks to cutting-edge emergent payment systems.

Prerequisites: LAW 7017; one year in law school in the full-time or part-time program.

LAW 723 Electronic Research Practicum**Credits 2. 2 Lecture Hours.**

LAW 724 Texas Criminal Law Practicum**Credits 2 to 3. 2 to 3 Lecture Hours.**

Simulation of a hypothetical case from arrest through post-conviction remedies; prosecuting and defense attorney perspectives; topics may include legal limits on criminal investigation, the grand jury process, setting bail, negotiating pleas bargains, drafting pretrial motions, the discovery process, trial rights, and tactics, habeas corpus, and appeals.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021 and LAW 7065.

LAW 7248 Employment Discrimination**Credits 3. 3 Lecture Hours.**

Examination of federal law concerning employment discrimination on the basis of race, sex, religion, national origin, age, and disability; includes Title VII of the Civil Rights Act of 1964, the Age of Discrimination in Employment Act, the Reconstruction Era Civil Rights Act, the Equal Pay Act, the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 725 Advanced Criminal Prosecution: 4th, 5th and 6th Amendment Practicum**Credits 2. 2 Lecture Hours.**

Expansion upon the doctrines of search and seizure, double jeopardy, protection against self-incrimination and the right to counsel; taught through a motion practice and habeas corpus method; ideal for those considering criminal prosecution or defense.

LAW 7259 Information Privacy Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Exploration of issues related to the concept of information privacy; examination of the collection, use, protection and disclosure of personal and other information by government entities and private sector actors, both domestically and cross-jurisdictionally; considers multiple regulatory schemes, including constitutional, tort, contract, property, statutory, administrative and international rules.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 726 Settlement Advocacy Practicum**Credits 3. 3 Lecture Hours.**

Advocacy training for the settlement of civil lawsuits; enhances effectiveness in problem solving; includes role-playing exercises.

LAW 7260 Employment Law**Credits 3. 3 Lecture Hours.**

Study of law of employer-employee relations in a nonunion context; employment at will, retaliatory discharge and wage and hour laws; introduction to employment relationship laws.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7263 The Information Society Seminar**Credits 2. 2 Lecture Hours.**

Exploration of the complex interrelationships between technological, economic, cultural, political and legal influences that shape the information society.

Prerequisite: All lockstep courses except LAW 7010.

LAW 7267 Government, Ethics and the Public Sector**Credit 1. 1 Lecture Hour.**

Review of federal and state governance; exploration of the extern's role in the policymaking process; introduction to ethical issues within government; research of a topic related to placement.

Prerequisites: Approval of instructor; public policy residency externship program.

LAW 7268 Entertainment Law**Credits 2. 2 Lecture Hours.**

Examination of basic legal concepts that govern transactions in the entertainment industry; constitutional protections of entertainment speech; rights of individuals who restrict it; copyright fundamentals; contract issues peculiar to the field; prevailing standards and practices of "the Business."

Prerequisites: LAW 7017; one year of law school in the full-time or part-time program.

LAW 727 Texas Legal Research Practicum**Credits 2. 2 Lecture Hours.**

Advanced legal research methodologies, costs and strategies within the context of Texas law; includes the Texas court system, legislation and legislative history, regulations and regulatory history, agency decisions and websites, treatises, electronic databases, free online resources, court rules, jury instructions, practice materials, and strategies for conducting thorough research.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 7277 Environmental Law**Credits 3. 3 Lecture Hours.**

Study of various approaches for dealing with adverse environmental effects, including private litigation, regulation, and financial incentives; survey of air and water pollution, solid and hazardous waste problems, and the National Environmental Policy Act; judicial review of legislative and administrative action; special problems raised by the U.S. federal form of government; administrative regulatory process in pollution control.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 728 LARW III: Estate Planning and Drafting**Credits 2. 2 Lecture Hours.**

Discussion of hypothetical clinical problems; extensive drafting and professor collaboration; comprehensive planning and drafting of estate planning documents to effectuate the plan.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7076; LAW 7174 or concurrent enrollment.

LAW 7284 Natural Resource Systems Capstone**Credits 2. 2 Lecture Hours.**

Capstone experience in the field of natural resources law enabling the blending of substantive doctrinal training with the development of practical skills and professional identity; includes a variety of inverse condemnation, water law, land use and other issues related to the massive flooding of Hurricane Harvey.

Prerequisites: Approval of instructor.

LAW 729 LARW III: Contract Drafting**Credits 2. 2 Lecture Hours.**

Contemporary commercial drafting of contracts; transactional practice useful for litigators; includes translation of a client's business deal into contract language; the organizational paradigm for a formal contract; drafting definitions, covenants, representations, and warranties; deconstructing and marking up contracts; transactional and formbook research; proper use of boilerplate provisions.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7017.

LAW 7290 Estate and Gift Tax**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of income, gift, estate, and generation-skipping transfer taxes relevant to the estate planning process; introduction to planning and drafting principles for complex estates.

Prerequisite: One year of law school in the full-time or part-time program; LAW 7076 or concurrent enrollment.

LAW 730 LARWIII: Patent Law Drafting**Credits 2. 2 Lecture Hours.**

Introduction to the practice of patent prosecution; obtaining a patent from the United States Patent and Trademark Office; follows process from the initial client interview through the issuance of a patent and through post-issuance filings.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7452.

LAW 7301 Family Law**Credits 3. 3 Lecture Hours.**

Study of legal problems related to the establishment, dissolution, reorganization, and evolving definitions of the family and family-like relationships in America; includes premarital arrangements, marriage (formal and informal), divorce, parent-child relationship, division of marital property, spousal and child support, domestic violence within the family, and same-sex unions. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7302 Federal Courts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the constitutional and practical doctrines that define the judicial power of the U.S.; emphasis on the role of federal courts in the American system of government; the federal courts' relationship to the other branches of the federal government and their relationship to the separate state systems of government; includes constitutional cases and controversies requirement, congressional control of the federal courts, Supreme Court review of state court decisions, the power of the federal courts to create federal law, abstention, suits against state governments, and the enforcement of federal rights.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 7303 Agricultural Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of major areas of agricultural law; practical approach including discussions and hands-on assignments; legal issues relating to animal agriculture, food safety, landowner rights, the interaction between agriculture and energy production, agricultural leases, agricultural policy and estate and succession planning for farm families.

Prerequisite: One year of law school in full-time or part-time program.

LAW 7304 Due Diligence for the Professional**Credit 1. 1 Lecture Hour.**

Practical skills in performing due diligence in business and financial transactions; analyze documents such as financial statements to uncover red flags for fraud; receive a certification from the International Organization of Due Diligence.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 731 LARW III: Litigation Drafting**Credits 2. 2 Lecture Hours.**

Practice in drafting of litigation documents expected to be prepared in typical civil litigation cases; utilization of a state trial court forum and the Texas Rules of Civil Procedure; includes conducting client interviews; drafting petitions, answers, and affirmative defenses; propounding written discovery; objecting to and answering written discovery; preparing and arguing motions; preparing other litigation-related documents.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7005.

LAW 7310 Non-Profit Organizations**Credits 2 to 3. 2 to 3 Lecture Hours.**

Laws, policies, and ideals affecting the creation, operation, and governance of nonprofit organizations; complex issues raised from nonprofit organizations' role in society involving constitutional, trust and property, corporate, and tax law; obtaining tax-exempt status; restrictions on lobbying and political activity; tax on unrelated business income; eligibility for charitable contributions; state regulation of charitable solicitations; oversight of nonprofit governance; charitable immunity.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 7313 Criminal Procedure Trial Rights**Credits 3. 3 Lecture Hours.**

Constitutionally mandated judicial processes for determining the guilt or innocence of those accused of crime and selecting an appropriate penalty; topics may include bail and pretrial detention, the prosecutor's charging decision, pretrial publicity, the defendant's competency to stand trial, jury selection, trial by jury, the defendant's right of confrontation and compulsory process, the right to effective assistance of counsel, sentencing, direct attacks on criminal convictions, and double jeopardy.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7316 First Amendment**Credits 3. 3 Lecture Hours.**

Study of the U.S. Constitution's First Amendment; addresses the First Amendment's effect on government attempts to regulate content of speech and to restrict speech by regulating one's method of speaking; the right of free speech in various physical settings; freedoms of assembly and press, free exercise of religion, and the prohibition on governmental establishment of religion.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7010.

LAW 7317 Government Contracts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of federal government contract law; includes contract formation issues, appropriations requirements, contract types, simplified, sealed bid and negotiated procurement methods, competition requirements, contract pricing, protests of awards, contract administration issues and changes, terminations, claims and litigation in federal forums, government fraud remedies and contractor debarments.

LAW 7318 Health Law**Credits 3. 3 Lecture Hours.**

Key concepts in health law, such as the structure of health care organizations, quality of health care, and liability of health care providers; access to health care; financing mechanisms of health care, including Medicare and Medicaid; regulation and oversight of managed health care; examination of developments in health care law concerning reproduction, bioethics, and human genetics.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7042.

LAW 7319 Federal Income Taxation**Credits 3. 3 Lecture Hours.**

Study of the basic principles of federal income tax; concentration on individuals, businesses, and investors as taxpayers; use of the Internal Revenue Code and federal tax regulations emphasized.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 732 LARW III: Real Estate Drafting**Credits 2. 2 Lecture Hours.**

Practice in drafting commonly used real estate documents; emphasis on Texas practice; personal and commercial transactions.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7032.

LAW 7320 Health Care, Technology and the Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to legal issues that healthcare businesses encounter when using technology to enhance the patient-physician experience; examination of the regulation of patient privacy and security, medical software and mobile applications, electronic medical records, robotic surgery, fraud and abuse, corporate practice of medicine and use of the Internet to deliver medicine across state lines.

Prerequisite: One year of law school in full-time or part-time program.

LAW 7321 Healthcare Compliance**Credits 3. 3 Lecture Hours.**

Understanding the complexities of the healthcare compliance process from practical, business and legal perspectives; components of an effective compliance plan and program as well as the issues that arise in the implementation and administration of a compliance plan; discover the many roles the compliance staff fulfill in encouraging compliance with laws, regulations and ethical principles and gain familiarity with some of the more significant issues that arise when allegations of noncompliance come to the attention of the federal and state governments.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 733 LARW III: Trademark Practice**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to the practice of trademark prosecution; registering trademarks with the United States Patent and Trademark Office; development of practical, analytical, and counseling skills in the area of trademark prosecution.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002; LAW 7550 or concurrent enrollment.

LAW 7332 Immigration Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Basic immigration statutes, including cases and doctrines that control immigration and naturalization; explores the treatment of undocumented immigrants and those seeking protection from persecution.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7333 Mediation Theory Law and Ethics**Credits 2. 2 Lecture Hours.**

Examination of the law and ethics of mediation, relevant social psychological and economic theories and empirical research and the dynamics, law and ethics of representing clients in mediation.

Prerequisites: LAW 7882 or concurrent enrollment.

LAW 7334 Mediation**Credits 3. 3 Lecture Hours.**

Integration of doctrine, theory and legal ethics to teach professional skills used by lawyers; examination of the law and ethics of mediation, relevant social psychological and economic theories and empirical research and the dynamics, law and ethics of representing clients in mediation.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 7338 Texas Water Law**Credit 1. 1 Lecture Hour.**

Exploration of the legal regime applicable in Texas for securing, allocating and managing water rights for public and private uses; encompasses both surface and groundwater resources and considers related environmental and other issues.

Prerequisites: All lockstep courses.

LAW 7339 Water Law**Credits 3. 3 Lecture Hours.**

Legal control of water resources; includes riparian rights, the water permit system, groundwater issues, water as a regional and shared resource, beneficial uses versus waste, underground conservation districts, and navigability.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 734 LARW III: Appellate Drafting**Credits 2. 2 Lecture Hours.**

Development of analytical and persuasion skills; emphasis on appellate brief writing and oral advocacy in the appellate court setting; participation in significant oral argument exercises.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 7341 Intellectual Property Licensing Practicum**Credits 2. 2 Lecture Hours.**

Addresses issues raised by licensing intellectual property; motivations for licensing; types of agreements used in licensing transactions; provisions commonly used in licensing contracts; practical scenarios applied in class.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7203, LAW 7350, LAW 7452, or LAW 7550.

LAW 735 LARW III: Family Law Drafting**Credits 2. 2 Lecture Hours.**

Practice in drafting documents for family law litigation; aspects of litigation examined from pre-trial to appeal.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7301.

LAW 7350 Intellectual Property Survey**Credits 3. 3 Lecture Hours.**

Overview of the basic principles of intellectual property law; includes coverage of trade secret, trademark, patent, and copyright fundamentals.

Prerequisite: One year of law school in the full-time or part-time program; 28 completed hours.

LAW 7351 International Intellectual Property**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of the international fabric of patent, copyright, and trademark law under both domestic laws and international treaties; examination of the foundation of international intellectual property policies underlying medicinal herbs, counterfeit goods, genetic material, and traditional knowledge; examination of heightened tensions on international intellectual property law due to flow of information and content across borders; harmonizing diverse legal frameworks.

LAW 736 LARW III: Estate Administration Drafting**Credits 2. 2 Lecture Hours.**

LARW III: Estate Administration Drafting. How to open, conduct and close an administration of a decedent's estate under Texas law; independent and dependent administrations; probate of the decedent's will; powers, rights, and duties of the personal representative; payment of creditor's claim; informal probate procedures; practical look at how to represent a client who is serving as the personal representative of a decedent's estate or who is a beneficiary of a decedent's estate.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7076.

LAW 7368 International Litigation**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of disputes touching more than one jurisdiction; includes selecting the proper forum, discovery, parallel law suits, choice of law, sovereign immunity, the recognition and enforcement of foreign judgments, and arbitration.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 7369 Public International Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to key doctrines of international law; fundamental principles and doctrines related to the sources of and bases for international law and international jurisdiction; law governing treaties and state succession; topics may include the use of force, protection of human rights and international criminal issues.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 737 LARW III: Drafting for the General Practitioner**Credits 2. 2 Lecture Hours.**

Introduction to the drafting of legal documents common to the general practitioner; general knowledge of and proficiency with the typical documents lawyers are asked to draft; practice of drafting techniques common to the various types of legal documents; "small firm" simulations involving a variety of legal matters including contract drafting, will drafting, negotiation, and settlement of a dispute; development of writing and oral advocacy skills already learned through the production of client letters, lawyer-to-lawyer email communications, and oral settlement negotiations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 7371 International Business Transactions**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the legal issues encountered in private international business transactions through international trade, exploitation of intellectual property rights and direct foreign investment; international sale of goods; bills of lading; letters of credit; government regulation of imports and exports; technology transfer and intellectual property protection; cross border taxation; forms of agreements, industrial works contracts, employment laws; forms and regulation of foreign direct investment; international corruption and the Foreign Corrupt Practices Act; examination of how customary international law, treaties and free trade agreements play a role in these transactions.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7056 or Business Associations (four credit-hour course offered prior to fall 2013).

LAW 7376 Local Government Law**Credits 3. 3 Lecture Hours.**

Discussions and projects situated in locations ranging from rural towns to major metropolises across the country covering how local governments exert tremendous influence over socioeconomics, immigration, race relations, environmental health, political power and housing and real estate; investigation of the public law of these governments on issues such as local government formation, boundary change, home rule, intergovernmental relations, local voting, redevelopment, city property ownership, municipal and school finance, housing and real estate, municipal dissolution and regional governance.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 738 LAWR III: How the Deals Get Done**Credits 2 to 3. 2 to 3 Lecture Hours.**

Transactional law practice using a hypothetical start-up business to help deal with the transactional issues in this context; combination of theory and practice to prepare for typical matters confronted in a transactional law practice.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7001 and LAW 7002; LAW 7056 or Business Associations (four credit-hour course offered prior to Fall 2013).

LAW 7383 Juvenile Justice**Credits 2 to 3. 2 to 3 Lecture Hours.**

Review of the juvenile's substantive and procedural rights.

LAW 7383S The Business Negotiator**Credits 3. 3 Lecture Hours.**

Development and strengthening of negotiation skills mostly in the context of business and transactions work; negotiation strategies and techniques expanded for deals, contracts, and relationships via lectures, role-plays and simulations; deal making in both U.S. and global context, including culture, ideology, and foreign governments and laws. Only one of the following will satisfy the requirements for a degree: LAW 7383S and LAW 7707S.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7389 Labor Law**Credits 3. 3 Lecture Hours.**

Study of the National Labor Relations Act and its implementation.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 739 LARW III: Business Collections**Credits 2. 2 Lecture Hours.**

Writing and analysis skills for business collection lawsuits; drafting a demand letter, petition, answer, interrogatories, judgment order, application for writ of garnishment and motions for substituted service; default judgment and summary judgment; introduction to negotiation, settlement and trial advocacy skills.

Prerequisite: One year in law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7017.

LAW 7390S Labor Negotiations Workshop**Credit 1. 1 Lecture Hour.**

Process of contract negotiations in the labor setting in both the private and public sectors; includes who has the right to bargain contracts, what can be bargained, bargaining in good faith and legal remedies; bargaining techniques including data-driven proposals also covered; labor bargaining simulations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 740 LARW III: Criminal Procedure**Credits 2. 2 Lecture Hours.**

Practice of concepts studied in LAW 7005; draft motions to suppress and habeas corpus petitions challenging timely topics.

Prerequisite: One year of law school in full-time or part-time program; LAW 7005.

LAW 7401 Land Use Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of private and public means of controlling land use; emphasis on planning and zoning, including the emerging problem of exclusionary land use controls; subdivision controls, restrictive deed covenants, eminent domain proceedings, and urban renewal.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 7402 Pre-Suit Patent Litigation**Credits 1 to 2. 1 to 2 Lecture Hours.**

Exploration of issues patent litigators should consider prior to filing a complaint for patent infringement; includes the market for patent enforcement; substantive assessment of cases; valuation of cases and economics of patent litigation; best practices for patent case assessment and pre-litigation ethical considerations; complaint drafting.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7452, LAW 7131, or LAW 7350.

LAW 7408 Energy Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to energy law and regulation in the United States; basic principles of public utility regulation; the division of jurisdiction between federal and state governments; key regulatory statutes and case law governing energy resources such as water, coal, oil, natural gas, nuclear and renewable energy; analysis of the environmental, regulatory, land use and economic concerns as they relate to each energy source; introduction to electricity and electric power competition in the United States.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7409 Special Problems in Corporate Law: Offshore Financial Transactions, Cayman Islands**Credits 2. 2 Lecture Hours.**

Combined classroom and field experience in the Cayman Islands includes examination of international business, tax strategies, and related policy issues; goals motivating U.S. corporations to organize offshore business entities and policy and legal issues related to the use of such entities; interaction with professionals and policymakers from the Cayman Islands.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7057, LAW 7362, LAW 7516, or concurrent enrollment.

LAW 741 Independent Study**Credit 1. 1 Lecture Hour.**

Specialized reading or research in an area of interest under a full-time faculty member's supervision. May be repeated for credit.

Prerequisites: All lockstep courses.

LAW 7411 Comparative Law**Credits 2. 2 Lecture Hours.**

Introduction to comparative legal systems; surveys the two main legal families, civil and common law, and mixed legal systems; review of specific areas of the law from a comparative perspective namely at comparative judicial politics; recent developments in comparative law and economics; legal origins literature and the relationship between law and development.

Prerequisites: LAW 7002, LAW 7017 and LAW 7032.

LAW 7412 Law Practice Management**Credits 2. 2 Lecture Hours.**

Review of the professional, ethical, and management requirements for starting and operating a law practice; statutory and regulatory aspects of practice; labor and employment; partnerships and professional corporations; trust and IOLTA accounts; advertising and solicitations; management skills and technology related to time, billing, accounting docketing, legal research, document preparation, filing, and client development.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7413 Cannabis Law, Policy and Business**Credits 3. 3 Lecture Hours.**

Exploration of the legal, policy and business issues of the new marijuana entrepreneurial ventures through a quickly evolving landscape of law, regulation and business constraints and the role of lawyers in helping clients achieve their goals.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 7414 Legislative Process**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of three areas of legislating: drafting/statutory construction, research and support groups, and procedures (committees/calendars/floor management); Committee Operations/debate/passage of bills; use of Texas legislative rules handbooks to guide from introduction to passage of legislation; election of a Speaker and Lt. Governor.

Prerequisite: One year in law school in the full-time or part-time program.

LAW 7416 Legislation**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of the state and federal legislative systems; examination of the relationship between the legislative, executive, and judicial process; philosophies of legislative operations and judicial interpretation; statutory and constitutional issues involved in interpreting and applying legislation; principles of drafting legislation; tracking actual legislative sessions and introduced bills; activity of a student-selected member of choice in the Texas Legislature; conducting a mock session of the Legislature to include committee activity, floor debate, voting, and post-legislative activities via extracurricular meetings.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7418 Legislation and Regulation**Credits 3. 3 Lecture Hours.**

Introduction to the role of statutes and administrative regulations in the practice of law, including their creation, amendment, and interpretation; includes the interpretive and lawmaking roles of the three branches of government; statutory interpretation; delegation and administrative agency practice; regulatory governance; foundation for courses in legislation, administrative law, constitutional law and a wide range of specialized courses that rely on statutory and regulatory law including bankruptcy, commercial law, environmental law, intellectual property, securities regulation, and tax law.

LAW 7419 Communications Law**Credits 3. 3 Lecture Hours.**

Basic overview of law and policy in the regulation of communications, including broadcasting, cable, wireline and wireless telephony, as well as more advanced areas such as broadband and Internet communications; focus on these technological advances to explore the ways in which legal, economic, social and technological forces shape and are harnessed by legal systems faced with rapid change; draws primarily on leading communications law cases, statutes, and FCC and FTC regulatory actions, focusing on issues such as net neutrality, privacy, free speech and broadcast indecency, competition and spectrum policy.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 742 Entrepreneurship Law Clinic**Credits 2 to 3. 2 to 3 Other Hours.**

Work with entrepreneurs on transactional matters in connection with the founding and/or development of a small business; emphasis on legal issues involved in starting a business including choice of entity, entity formation and founding agreements. May be repeated for credit.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7056.

LAW 7426 The Lawyer in Government Seminar**Credits 3. 3 Lecture Hours.**

Exploration of the diverse political, ethical and substantive issues that public policy lawyers encounter daily; critical thinking and analysis of public discourse and policymaking in context of externships; distill exploration into written work product and class discussion.

Prerequisite: Approval of instructor.

LAW 7428 Marital Property**Credits 3. 3 Lecture Hours.**

Study of the property rights of husband and wife under the Texas community property system, including coverage of the law relating to homestead.

Prerequisites: One year of law school in the full-time or part-time program; 28 completed hours.

LAW 743 Innocence Project**Credits 2 to 3. 2 to 3 Lecture Hours.**

Investigation of claims of actual innocence on behalf of Texas inmates; document/transcript review; examining new evidence and locating and re-interviewing witnesses; work closely with Innocence Project of Texas attorneys if cases move into litigation; weekly classroom component explores causes and cures of wrongful convictions. May be repeated for credit.

Prerequisite: One year of law school in full-time or part-time program.

LAW 7432 International Petroleum Transactions**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of laws, legal issues and principal contracts utilized in the international oil and gas industry in the exploration for and production and marketing of oil and gas; practical knowledge of international oil and gas legal issues by working with actual international oil and gas contracts.

Prerequisites: LAW 7017; one year in law school in the full-time or part-time program.

LAW 7435 Mergers and Acquisitions**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of legal issues related to corporate mergers and acquisitions; mechanics and structure of merger and acquisition transactions, shareholder rights, fiduciary duties, federal securities laws, accounting and tax issues, anti-takeover defenses and antitrust considerations.

LAW 7437 National Security Law**Credits 3. 3 Lecture Hours.**

Examination of criminal and civil statutes, Supreme Court cases, executive orders and government policies that impact U.S. national security; relevant to prosecutors, criminal defense attorneys and lawyers representing state and federal agencies, law enforcement, technology companies, as well as individuals served by these entities.

LAW 7438 Natural Resources Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

National Forest Management Act, the Clean Water Act, natural resource conservation acts, Wild and Scenic Rivers Act, the National Environmental Policy Act, and other acts and issues relating to the use, management, and preservation of natural resources.

LAW 744 Courthouse Perspectives**Credit 1. 1 Lecture Hour.**

Practical, hands-on study of various courts in the Tarrant County area; includes the Court of Appeals, District Courts (civil, criminal, and family), County Courts (civil, criminal, and probate), and Justice of the Peace Courts; understanding the function, jurisdiction, and personnel of each court; daily lecture at the Court of Appeals by Justice McCoy, followed by visits to the various courts; introduction to judges, court coordinators, and court reporters; possible observation of proceedings in each court visited; emphasis on proper courtroom etiquette and procedural training on topics such as how to actually file a document with a court.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7440 Insurance Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of fundamental legal principles relating to the construction of various types of liability and first-party insurance contracts; includes insurance regulation, application for coverage and acceptance of risk, rules of construction, bad faith, and insurance litigation strategy.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 7442 Law and Economics**Credits 2 to 3. 2 to 3 Lecture Hours.**

Laws as incentives for changing behavior and instruments for policy objectives; theory to predict effects of legal rules on behavior; efficiency and distribution concerns to evaluate legal policy; basic economics, including Coase Theorem, and classical topics such as property, contracts, torts and criminal law.

Prerequisites: One year in law school in the full-time or part-time program.

LAW 7444 Oil and Gas**Credits 3. 3 Lecture Hours.**

Study of oil and gas law; interests that may be created in oil and gas; transfer and conveyance of such interests; rights of operators and landowners; provisions in the oil and gas lease; rights of assignees; regulations dealing with exploration, production, and conservation.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 7445 Environmental Oil and Gas Law**Credits 2. 2 Lecture Hours.**

Exploration of federal, state, and local environmental laws that impact the oil and gas industry; current laws that apply to hydraulic fracturing activities as well as current studies and enforcement actions concerning the same; typical claims and defenses asserted in recent hydraulic fracturing litigation.

Prerequisites: One year of law school in the full-time or part time program; LAW 7444.

LAW 745 Advanced Dispute Resolution Survey: Negotiation, Mediation, and Arbitration**Credits 3. 3 Lecture Hours.**

Introduction to the main three tools of Alternative Dispute Resolution including negotiation, mediation, and arbitration; theoretical and practical aspects of all three tools via lecture, simulations and exercises.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7452 Patent Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of how proprietary interests in technology are protected by patent law; focus on issues relating to validity, the nature of the subject matter protected, and enforcement of proprietary rights.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7454 Payment Systems**Credits 3. 3 Lecture Hours.**

Exploration of commercial paper, bank deposits, and collections under UCC Articles 3 and 4; includes negotiability and the rights and obligations of parties to commercial paper, defenses to liability, relationship of banks and customers, check collection, and suretyship.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7042.

LAW 7458 Preparing for the Bar Exam**Credits 2 to 3. 2 to 3 Lecture Hours.**

Overview of the contents of the bar exam; critical skills and strategies necessary for success on each day of the exam; covers selections from several MBE and essay-tested subjects; simulation of portions of the bar exam with performance feedback.

LAW 746 Interviewing and Counseling Practicum**Credits 3. 3 Lecture Hours.****LAW 747 Public International Dispute Resolution****Credits 3. 3 Lecture Hours.**

Examination of how public disputes that endanger peace are resolved internationally; will focus on disputes between countries and disputes within countries that result in some sort of international intervention; provide a basic understanding of the international organizations which work at a diplomatic level to resolve disputes including the United Nations, the Organization for Security and Co-operation in Europe and the European Union; examination of bilateral public international dispute resolution; examination of specific case studies, such as Bosnia and Herzegovina, Afghanistan and Kosovo.

LAW 7477 Real Estate Financing**Credits 2 to 3. 2 to 3 Lecture Hours.**

Exploration of the basic elements involving real estate financing; understanding of the legal framework and practical considerations affecting real estate finance transactions; secured lending, mortgage law, installment land contracts, foreclosures, lien priorities, title insurance and practical issues when representing a lender or borrower on commercial or single family transactions; commercial leasing, ground leases and real estate development.

LAW 748 The Business Negotiator**Credits 3. 3 Lecture Hours.**

Development and strengthening of negotiation skills mostly in the context of business and transactions work; negotiation strategies and techniques expanded for deals, contracts, and relationships via lectures, role-plays and simulations; deal making in both U.S. and global context, including culture, ideology, and foreign governments and laws.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7483 Military Justice**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of statutes, policies and rules governing military justice process from investigation through trial and appellate process; military criminal procedure and law governing court-martial proceedings; relationship of military courts to civilian courts; use of military commissions for trying enemy combatants for war crimes and other offenses.

Prerequisites: LAW 7021; one year in law school in the full-time or part-time program.

LAW 7484 Remedies**Credits 2 to 3. 2 to 3 Lecture Hours.**

Review of the forms of legal and equitable relief a court is equipped to grant by way of redress to those who have been or may be injured; alternative choices and tactical advantages of each; may also cover the scope of judges' powers of contempt.

Prerequisite: LAW 7001, LAW 7002, LAW 7032, LAW 7017, LAW 7005, LAW 7042, and LAW 7418.

LAW 7487 Spanish for Lawyers**Credits 2 to 3. 2 to 3 Lecture Hours.**

Preparation of the Spanish proficient for the practice of immigration law, criminal law or family law; discussion of legal concepts and procedures related to representation of Spanish-speaking clients; review of Spanish vocabulary through simulations of interviewing, counseling and representing Spanish-speaking clients.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7021; LAW 7301 or LAW 7332 or concurrent enrollment.

LAW 7488 Secured Transactions**Credits 3. 3 Lecture Hours.**

Study of personal and commercial financing by loans and credit sales under agreements creating security interests in the debtors' personal property (Article 9 of the UCC and relevant provisions of the Bankruptcy Code).

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017 and LAW 7032.

LAW 7489 Crimmigration**Credit 1. 1 Lecture Hour.**

Intersection of criminal and immigration law; issues non-citizen criminal defendants face; what obligations defense counsel has to non-citizen clients; how to analyze the immigration consequences of state criminal offenses; strategies to protect non-citizen defendants from removal; concludes with a final legal memo on the immigration consequences of a particular Texas criminal offense.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 749 Labor Negotiations Workshop**Credit 1. 1 Lecture Hour.**

Process of contract negotiations in the labor setting in both the private and public sectors; includes who has the right to bargain contracts, what can be bargained, bargaining in good faith and legal remedies; bargaining techniques including data-driven proposals also covered; labor bargaining simulations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 7492 Securities Regulation**Credits 3. 3 Lecture Hours.**

Review of federal and state regulation of the public distribution, offer, and sale of corporate securities; study of the Securities Act of 1933 and portions of the Securities Exchange Act of 1934; types of securities and underwriting techniques; key definitions and exemptions in the statutes; state securities law with emphasis on the securities registration and anti-fraud aspects of the Texas Securities Act.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7056 or Business Associations (four credit-hour courses offered prior to fall 2013).

LAW 7493 Securities Law Enforcement**Credits 2. 2 Lecture Hours.**

Exploration of the SEC's enforcement of federal securities laws and related efforts by FINRA and the DOJ; introduction to how the SEC enforces federal securities laws; aspects of the enforcement process; investigative techniques; the Wells process; SEC's litigation efforts in both federal courts and administrative proceedings.

Prerequisites: One year of law school in full-time or part-time program; LAW 7056.

LAW 750 Sports Law**Credits 3. 3 Lecture Hours.**

Thorough look at both the academic (e.g., labor and antitrust) and practical (e.g., contracts and agents) aspects of professional sports and the emerging field of sports law; rules governing Olympic competition, the NCAA, and other amateur athletics.

LAW 7500S Sports Law**Credits 3. 3 Lecture Hours.**

Thorough look at both the academic (e.g., labor and antitrust) and practical (e.g., contracts and agents) aspects of professional sports and the emerging field of sports law; rules governing Olympic competition, the NCAA, and other amateur athletics.

LAW 751 Negotiation Theory and Practice Practicum**Credits 3. 3 Lecture Hours.**

Development of negotiation skills; simulations and negotiation exercises provide first-hand experience in applying interest-based negotiation techniques; examination of the skills, constraints, and dynamics of negotiation; theoretical framework for understanding negotiation practice in a variety of contexts through readings from the fields of law, psychology, business, and communication.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7515 International Taxation**Credits 2. 2 Lecture Hours.**

Survey of core concepts of the U.S. taxation of individuals and corporations inbound and outbound activities; comparison of U.S. tax practice with its trading partners as well as examination of key tax policy drivers of international organizations.

Prerequisites: LAW 7319.

LAW 7516 Taxation of Business Entities**Credits 3. 3 Lecture Hours.**

Study of the federal income tax treatment of C corporations and pass-through entities such as partnerships, S corporations, and limited liability companies; examines on a comparative basis the formation, operation, and sales and liquidation of these entities; corporate reorganizations and related transactions also covered.

LAW 752 Trial Advocacy Practicum**Credits 3. 3 Lecture Hours.**

Study of civil and criminal trials through lectures, demonstrations, and simulations; examination of each trial segment separately; accompanying exercises conducted from attorney and witness perspectives; presentation of an entire case through verdict via mock trial at a local courthouse.

Prerequisites: All lockstep courses except LAW 7010; LAW 7080 or concurrent enrollment.

LAW 753 Family Mediation Clinic**Credits 3. 3 Lecture Hours.**

Development of mediation skills through lecture and role-play; attendance of some classes in the courtrooms of two family judges; observe and mediate real family disputes at local mediation centers; family mediation certificate given on completion of this course and LAW 7881S. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7532 Texas Criminal Procedure**Credits 3. 3 Lecture Hours.**

Study of laws regulating Texas criminal process; arrest to post-conviction review; emphasis on unique characteristics.

LAW 7533 Texas Real Property**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of Texas real property law through Texas case and statutory law; includes conveyances of real property (including contracts and deeds), liens, adverse possession, and servitudes (i.e., easements, real covenants, and equitable servitudes).

Prerequisites: One year of law school in the full-time or part-time program; LAW 7032.

LAW 7534 Suing and Defending the Government**Credits 2. 2 Lecture Hours.**

Fundamentals involved when plaintiffs bring civil claims against government entities; examination of issues from both the plaintiffs' and defendants' perspectives; actions include negligence claims (auto accidents), contract enforcement, civil/human rights claims and regulatory challenges brought against municipal, state, federal and foreign government defendants; studies who may bring claims, sovereign immunity and its exceptions, remedies (the range of money damages and interlocutory relief) and additional government defenses such as abstention.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 754 Wills and Estates Clinic**Credits 2 to 3. 2 to 3 Lecture Hours.**

Real-world experience in handling the estate planning needs of low-income clients; under the supervision of licensed attorneys, interview clients, draft documents including wills, powers of attorney, health care advance directives and other instruments; may handle probate matters.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7076.

LAW 7540 Texas Pretrial Procedure**Credits 3. 3 Lecture Hours.**

Study of Texas law in civil cases pertaining to processes before trial; includes jurisdictions, venue, initiating legal proceedings, obtaining factual information from parties and nonparties, and terminating litigation prior to trial.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 7548 Texas Trials and Appeals**Credits 3. 3 Lecture Hours.**

Study of Texas law in civil cases pertaining to trial and appellate procedure concerning the jury; presentation of the case; motions for instructed verdict; the court's charge; the verdict; trial before the court; post-trial motions and procedures; final and appealable judgments; appellate jurisdiction; perfection of appeal; courts of appeal; Supreme Court of Texas; original proceedings in appellate courts.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 755 Employment Mediation Clinic**Credits 2. 2 Lecture Hours.**

Further development beyond basic mediation training with opportunities to co-mediate workplace disputes that arise at the Federal Aviation Administration or other agencies; co-mediate three to five disputes, with the assistance of an experienced and trained mediator; review available background documents, meet with co-mediator, and prepare for the mediation. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7550 Trademark and Unfair Competition Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Principles of unfair competition law; examination of the creation, maintenance, and enforcement of trademark rights; related doctrines of rights of publicity, trade dress, trade secrets, and false advertising; exploration of public policies and economy underlying trademark law.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7552 Business Fundamentals for Lawyers**Credits 1 to 2. 1 to 2 Lecture Hours.**

Introduction to business concepts and processes important to law practice; covers areas critical to business lawyers, such as financial statements, business strategy, supply chains, HR management, finance, and marketing operations; includes business problem simulations.

Prerequisites: One year in law school in the full-time or part-time program.

LAW 7557 Sales and Leases**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of the sale and lease of goods and the principal commercial law governing such transactions; includes Articles 2 and 2A of the uniform Commercial Code as well as the United Nations Convention on Contracts for the International Sale of Goods; sale and lease contract formation; establishment of express and implied contract terms; creation and disclaimer of warranties; risk of loss; remedies for breach.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7017.

LAW 756 Family Law and Benefits Clinic**Credits 2 to 3. 2 to 3 Lecture Hours.**

Represent indigent clients in court under direct faculty supervision; classroom component covers substantive law, essential practical skills, and discussion of client cases. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 757 Intellectual Property and Technology Clinic**Credits 2 to 3. 2 to 3 Lecture Hours.**

Emphasis on general trademark and patent issues; includes counseling clients, conducting registerability or patentability searches and preparing trademark or patentability opinions for clinic clients, drafting and filing of trademark or patent applications and response to Office Actions.

Prerequisites: One year of law school in full-time or part-time program; LAW 7350 or LAW 7550 or concurrent enrollment.

LAW 7579 White Collar Crime**Credits 3. 3 Lecture Hours.**

Exploration of the substantive and procedural problems connected with the federal prosecution and defense of white collar crime; examination of selected federal statutes, including the Racketeer-Influenced and Corrupt Organizations Act (RICO); mail and wire fraud, securities fraud, money laundering, corporate criminal liability, and grand jury investigations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021.

LAW 758 Mediation Clinic**Credits 3. 3 Lecture Hours.**

Mediation training following standards promulgated by the Texas Mediation Trainers Roundtable; classroom training and role-playing participation; mediator and disputant perspectives; clinic portion of the training consists of mediations or observations at Dispute Resolution Centers and other locations. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7588 Elder Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Overview of the law relating to aging individuals and an older American society; includes employment and disability discrimination, retirement, property management, guardianship and protection, health care financing, health care decision-making, housing, and family issues unique to grandparents; Texas law on particular subjects covered when possible.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 759 Deposition Skills Workshop**Credit 1. 1 Lecture Hour.**

Deposition practice and the strategy behind taking depositions; fundamental depositions skills; rules pertaining to depositions in federal and state court; how to properly notice a deposition; how to depose parties, fact witnesses, and experts; deposition performance class offers opportunity to take and defend a deposition.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 760 Civil Motion Workshop**Credit 1. 1 Lecture Hour.**

Civil motion practice; research of written motions and responses filed in actual nonactive lawsuits; argument of motions and responses, within appropriate time constraints, in front of a sitting district court judge in Tarrant County; understanding of the law related to each motion; emphasis on oral argument skills and development of a level of comfort arguing motions in an actual classroom.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005 or concurrent enrollment.

LAW 7600 Law and Economics Seminar**Credits 2. 2 Other Hours.**

Introduction to the methodology and literature of the economic analysis of law or law and economics; main law-and-economics literature of the last 30 years.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 7603 ADR in the Workplace Seminar**Credits 2. 2 Lecture Hours.**

Study of workplace dispute resolution; focus on the legal status and practical application of Alternative Dispute Resolution (ADR) in the workplace; includes labor arbitration, individual employment arbitration, mediation of employment disputes; review of litigation of employment disputes to explore the pros and cons of using ADR versus litigation; simulations of arbitration and mediation of these disputes.

Prerequisites: All lockstep courses except LAW 7010.

LAW 7604 Animal Law**Credits 2. 2 Lecture Hours.**

Overview of the changing relationship between society and animals; examination of the development of civil and criminal law relating to animals; exploration of philosophical issues that drive the law's evolution; law as an expression of how we share the environment with animals.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7606 Bioethics and the Law Seminar**Credits 2. 2 Lecture Hours.**

Examines the legal, ethical, and policy aspects of current issues in bioethics; includes patient autonomy, the right to refuse treatment, euthanasia and physician-assisted suicide, genetics, reproductive technologies, fetal treatment and research, human experimentation, and organ transplantation.

Prerequisites: All lockstep courses except LAW 7010.

LAW 761 Scientific Criminal Evidence Workshop**Credit 1. 1 Lecture Hour.**

Theory and practice of using scientific evidence in criminal trials; topics may include the value and use of DNA, mental health, polygraphs, and autopsy evidence; emphasis on understanding, preparing for, and conducting "Daubert hearings" which involve challenges to the admissibility of scientific expert testimony; includes lectures by professor and guest speakers, as well as role-playing of both prosecutors and defense lawyers.

Prerequisite: One year of law school in the full-time or part-time program; LAW 7080 or concurrent enrollment.

LAW 7615 Death Penalty Seminar**Credits 2. 2 Lecture Hours.**

Study of the law of capital punishment; guiding legal principles and parameters of this form of criminal sanction; includes narrowing capital punishment to certain crimes and particular types of defendants, the role of race in the death penalty, death qualified juries, and the function of "guided discretion" in the use of the sanction.

Prerequisites: All lockstep courses except LAW 7010.

LAW 7616 Advanced Criminal Procedure Seminar**Credits 2. 2 Lecture Hours.**

Exploration of plea bargaining of criminal cases; emerging trends in the criminal justice system, such as restorative justice, therapeutic courts and drug courts; examination of issues relating to juvenile justice including alternative proceedings and the theory and policy underlying the treatment of juvenile offenders; various forms of criminal case resolution and the underlying policy goals.

Prerequisites: All lockstep courses.

LAW 762 Civil Evidence Workshop**Credit 1. 1 Lecture Hour.**

Practical subjects related to courtroom evidence; instruction, demonstration, and practice in offering common forms of evidence in civil and criminal trials; common objections and responses to courtroom evidence; depositions, statements, and sworn testimony; preserving the record and offers of proof.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7080 or concurrent enrollment.

LAW 7622 Domestic Violence Seminar**Credits 2. 2 Lecture Hours.**

Examination of domestic violence in the criminal justice system and family law; exposure to the issue of domestic violence; observation of one domestic violence trial or lengthy hearing.

Prerequisites: All lockstep courses except LAW 7010.

LAW 7626 Advanced Topics in Property Seminar**Credits 2. 2 Lecture Hours.**

Explores the concept of property, its theoretical dimensions and usefulness in resolving difficult legal and social problems; builds upon material covered in first-year property courses; focuses on four or five substantive areas that will rotate from semester to semester; topics may include history and development of property rights, property theory, property rights in the body, housing discrimination, eminent domain and taking law, property in cyberspace, comparative property law, and land use involving religious groups.

Prerequisites: All lockstep courses except LAW 7010.

LAW 7627 National Security Law Seminar**Credits 2. 2 Lecture Hours.**

Examination of terrorism and its effects on the lives of Americans; balancing national defense with ideals of justice and liberty; legal and political framework for national security law, war powers, the rapidly evolving topic of counterterrorism, the challenges of the intelligence community and the protection of state secrets.

Prerequisite: All lockstep courses.

LAW 763 Pretrial Motion Workshop**Credit 1. 1 Lecture Hour.**

Learn about and draft three pre-trial motions: Motion to Transfer Venue, Motion to Compel Discovery, and Special Appearance 120a; argue motions in class.

Prerequisite: One year of law school in the full-time or part-time program; LAW 7005 or concurrent enrollment.

LAW 7631 Advanced Topics in Negotiation Seminar**Credits 2. 2 Lecture Hours.**

Series of topics involved in the theories, strategies and techniques of effective negotiation; topics may include avoiding being exploited, utilizing competitive negotiation moves, increasing collaboration, biases and cognitive illusions, emotions during the negotiation, principles of influence and persuasion, power in negotiation, culture and gender in negotiation, ethical considerations and critiques of settlement advocacy.

Prerequisites: All lockstep courses except LAW 7010.

LAW 7634 Oil, Gas and Natural Resource Seminar**Credits 2. 2 Lecture Hours.**

Explores natural resources law, the body of legal rules and processes that govern the ownership, human use, management, and protection of natural resources including oil and gas and other minerals, wildlife, rivers, national parks, and forests; history, politics and economics of natural resources law; practical aspects of practicing in this area; tools needed to find and understand the laws relevant to particular resources.

Prerequisites: All lockstep courses except LAW 7010.

LAW 7636 Gender and the Law Seminar**Credits 2. 2 Lecture Hours.**

Explores the historical, comparative, statutory, and constitutional dimensions of law's regulation of sexuality and gender; examination of case law, supplemented with statutory law and articles; critiques and defenses of marriage; legal and social implications of categories such as bisexuality, intersexuality, and transsexuality; relationship between feminist, gay and queer politics; impact of sexual orientation and gender challenges on the workplace, military policy, family law, and education.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7638 Islamic Middle East Seminar****Credits 2. 2 Lecture Hours.**

Exploration of secular and Islamic law that serve as the basis of legal systems in various Middle Eastern nations; history and practice of Islamic law; origins of Islamic law; development of the classical schools of thought; nature of pre-modern and legal institutions; analysis of various methodologies represented in Islamic legal literature; identifying modern manifestations of these methodologies in contemporary Muslim discourses; how Islamic law intersects with secular laws in the context of modern family law, finance, and human rights.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7639 Law and Science Seminar****Credits 2. 2 Lecture Hours.**

Examination of the interrelation of the law with science in varying contexts including the courts, legislative and agency action, and societal norms and expectations; exploration of the impact science has on the law and how the law affects scientific research and progress; the application of science in legal circumstances as well as the law to various scientific topics; topics may include the role of the public, government, and private sectors in scientific development; the role of courts and the law in managing scientific information; legal and scientific standards and methodologies; risk assessment; scientific misconduct; environmental regulations.

Prerequisites: All lockstep courses except LAW 7010.**LAW 764 Introduction to the United States Legal system****Credits 3. 3 Lecture Hours.**

Broad survey of the doctrine and structure of the legal system in the United States, including major common law, statutory and constitutional topics; context for the operation of law in the United States and improves understanding of specific doctrine and practices learned elsewhere.

Prerequisites: Approval of program director.**LAW 7641 The Politics of Supreme Court Decision Making Seminar****Credits 2. 2 Lecture Hours.**

Consideration of the Supreme Court as a political entity, not merely a court or decision-making body; study of individual justices, different judicial periods and courts (i.e., the Warren Court, the Burger Court, the Roberts Court); evaluation of how the political nature of decision making affects lawyers and their clients.

Prerequisites: All lockstep courses.**LAW 7643 Jurisprudence Seminar****Credits 2. 2 Lecture Hours.**

Introduction to legal philosophy; includes major jurisprudential issues, the definition of law, the concept of justice, the relation of law and morality, and the function of legal analysis including modern American legal philosophies.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7646 Sentencing Law and Policy Seminar****Credits 2. 2 Lecture Hours.**

The sentencing phase of an offender's contact with the criminal justice system; exploration of the dynamics of the creation, use and impact of sentencing law and policy through the experiences of the key stakeholders at the state and federal level.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7647 Fatherhood and the Law Seminar****Credits 2. 2 Lecture Hours.**

Examination of fatherhood and the changes over the centuries and despite these changes much of the law presupposes that fathers are generally disinterested in being parents; addresses how these attitudes affect laws concerning abortion, adoption, child custody and support and a host of other issues affecting fathers.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7648 International Water Law Seminar****Credits 2 to 3. 2 to 3 Lecture Hours.**

International law and policy relating to uses of and rights to freshwater resources; availability, distribution and scarcity of global freshwater; sovereignty over natural resources; conflict, conflict resolution and dispute prevention; ethics and human right to water; water and environment; development, exploitation and conservation of transboundary freshwater resources.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7649 Marijuana Law, Policy and Business Seminar****Credits 2. 2 Lecture Hours.**

Exploration of legal, policy and business issues raised by the growth of medical and recreational marijuana businesses; problems and benefits of legalization; examination of various approaches to regulation and taxation of businesses; practical problems involved in an industry that is illegal at the federal level.

Prerequisites: All lockstep courses except LAW 7010.**LAW 765 Fiduciary and Risk Management****Credits 1 to 3. 1 to 3 Lecture Hours.**

Expansion of the traditional legal fiduciary responsibility beyond its historic roots and how it applies to enterprise risk management; recognition of new risks and insuring excellence in corporate behavior; focus on enterprise's shared values versus share value; understanding how public enterprise has evolved from financial capitalism to sustainable capitalism.

LAW 7650 Law and Literature Seminar**Credits 2. 2 Lecture Hours.**

Examines the nature, practice, and institutions of law as depicted in a variety of literary texts; explores how techniques associated with literary criticism may be applied to selected legal texts.

Prerequisites: All lockstep courses except LAW 7010.**LAW 7655 Law and Psychology Seminar****Credits 2. 2 Lecture Hours.**

Study of the intersection between law and psychology; emphasis on the application of forensic psychology in the criminal justice system; includes the evidentiary standard governing the admissibility of scientific evidence, false confessions, eyewitness testimony, repressed memories, and sex offenders.

Prerequisites: All lockstep courses except LAW 7010.**LAW 766 Income Tax For Financial Planners****Credits 1 to 3. 1 to 3 Lecture Hours.**

Introduction to the income taxation of individuals, sole proprietorships, partnerships and corporations.

LAW 7666 Race and the Law Seminar**Credits 2. 2 Lecture Hours.**

Impact of race and ethnicity on the American legal system from a historical and contemporary standpoint; examination of the role of race in criminal justice, immigration, family affairs, business, education and national security context; preparation to represent diverse clients.

LAW 767 Legal Risk Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Exploration of basic best practices to prepare for careers in risk management and compliance.

LAW 7675 Supreme Court Seminar**Credits 2. 2 Lecture Hours.**

Interactive portrayal of U.S. Supreme Court members; reading briefs in selected cases presently before the Supreme Court; discussing cases; writing opinions deciding the cases.

Prerequisites: All lockstep courses; LAW 7010 or concurrent enrollment.

LAW 7676 Texas Search and Seizure Seminar**Credits 2. 2 Lecture Hours.**

Examination of the Fourth Amendment and the Texas Constitution, Article 1 Section 9; the expectation of privacy, probable cause, search and arrest warrants, warrantless action, the exclusionary rule, Terry stops, and post 9/11 considerations; participation in a practical application of the law of search and seizure.

Prerequisites: All lockstep courses except LAW 7010; LAW 7065 or concurrent enrollment.

LAW 768 Advanced Wealth Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Investments and jurisdictions and offshore investing, client asset analysis, estate planning analysis, wills and trusts, retirement plans and analysis, stock options, fiduciary duties, asset protection, philanthropy and international financial products for high net worth persons; includes case study, data collection and analysis, research, writing and citations.

LAW 7682 International Environmental Law Seminar**Credits 3. 3 Lecture Hours.**

Contemporary perspective of domestic and international law applicable to transboundary and global environmental issues; relationship of environmental law with international relations, trade, development, resource exploitation and conservation and human rights; role of international and non-governmental organizations in the development of international and domestic environmental laws and policies; may include case studies of disputes and investigations; requires a paper to qualify for rigorous writing requirement.

Prerequisites: LAW 7001, LAW 7002, LAW 7021, LAW 7042, LAW 7418, LAW 7005, LAW 7017 and LAW 7032.

LAW 769 Anti-Money Laundering and Bank Secrecy**Credits 1 to 3. 1 to 3 Lecture Hours.**

Study of federal income tax treatment of C corporations and pass-through entities such as partnerships, S corporations and limited liability companies; examination of the formation, operation and sales and liquidations of these entities.

LAW 770 Cybersecurity**Credits 1 to 3. 1 to 3 Lecture Hours.**

Examination of the risks facing the information that we receive, create, store and send; prepares participants with tools to understand and respond to these risks as they evolve and to participate in the protection of their own data, that of their firm and that of their clients.

LAW 7704 Guardianship Practicum**Credits 1 to 2. 1 to 2 Lecture Hours.**

Overview of Texas guardianship law; how to determine if a guardianship is needed, if there are less restrictive alternatives to a guardianship, and what those alternatives entail; drafting applications and orders for a guardianship of the person and/or estate along with all supporting documents; drafting inventory, appraisements, list of claims, annual accountings, reports of attorneys or guardians ad litem, and final accountings for guardianships of the estate; practical look at how to represent an applicant for guardianship; representing the proposed incapacitated person.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7707 Criminal Procedure Practicum**Credits 2. 2 Lecture Hours.**

Practice of the concepts first studied in LAW 7065; drafting of motions to suppress and habeas corpus petitions challenging timely topics.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7065.

LAW 7707S Negotiation Theory and Practice Practicum**Credits 3. 3 Lecture Hours.**

Development of negotiation skills; simulations and negotiation exercises provide first-hand experience in applying interest-based negotiation techniques; examination of the skills, constraints, and dynamics of negotiation; theoretical framework for understanding negotiation practice in a variety of contexts through readings from the fields of law, psychology, business, and communication.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 771 Introduction to Risk Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Introduction to risk via a board game to introduce concepts; enhancement of personal skills including understanding player's psychology, how to debate people and influence them, how to negotiate successfully and when to break a deal or alliance.

LAW 772 Ethical Decision Making in Wealth and Risk Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Examination of ethical decision making in a professional environment.

LAW 7725 Texas Criminal Law Practicum**Credits 2 to 3. 2 to 3 Lecture Hours.**

Simulation of a hypothetical case from arrest through post-conviction remedies; prosecuting and defense attorney perspectives; topics may include legal limits on criminal investigation, the grand jury process, setting bail, negotiating pleas bargains, drafting pretrial motions, the discovery process, trial rights, and tactics, habeas corpus, and appeals.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7021 and LAW 7065.

LAW 7727 Business Law Seminar**Credits 2. 2 Lecture Hours.**

Exploration of various areas of business law; includes corporate, commercial, securities, tax, and regulatory law in both domestic and international settings; reflection on the fact that complex business problems often involve the intersection of several bodies of law.

Prerequisites: All lockstep courses except LAW 7010; LAW 7056 or Business Associations (four credit-hour course taught before fall 2013).

LAW 773 Financial Innovations**Credits 1 to 3. 1 to 3 Lecture Hours.**

In-depth understanding for a more comprehensive portfolio management; general discussion of types of derivatives and their characteristics as well as detailed examination of each market and its contracts including forwards, futures, options, swaps, credit derivatives markets and their instruments.

LAW 774 Introduction to Wealth Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Wealth management strategy, money management, risk, credit, asset management and protection, economics, financial institutions, financial and SEC law, ethics, regulations and professionalism; examination of the basics of investments, markets, risk, retirement, federal taxation, asset management and estates while analyzing theories and techniques of developing investment policies and strategies; outlines processes in wealth management and global financial planning.

LAW 775 Risk Management and Information Systems**Credits 1 to 3. 1 to 3 Lecture Hours.**

Examination of the objectives of information security management to implement appropriate processes to enable management to understand security-related threats and vulnerabilities, both technical and operational; selection of appropriate countermeasures to minimize the impact of such threats and measurements to assure that the selected countermeasures and detection tools in place are working as intended.

LAW 776 Financial and Portfolio Management**Credits 3. 3 Lecture Hours.**

Application of investment principles considering families' goals, time horizons, risk tolerance and tax implications to build an investment portfolio; attributes of various asset classes as well as asset allocation, selecting securities and portfolio management; development of successful investment programs for personal investors and wealth managers.

LAW 777 Estate, Insurance and Annuity**Credits 3. 3 Lecture Hours.**

Introduction to estate planning for tax minimization, protection and wealth creation including life insurance and annuities.

LAW 7775S Trial Advocacy Practicum**Credits 3. 3 Lecture Hours.**

Study of civil and criminal trials through lectures, demonstrations, and simulations; examination of each trial segment separately; accompanying exercises conducted from attorney and witness perspectives; presentation of an entire case through verdict via mock trial at a local courthouse.

Prerequisites: All lockstep courses except LAW 7010; LAW 7080 or concurrent enrollment.

LAW 7776 Texas Legal Research Practicum**Credits 2. 2 Lecture Hours.**

Advanced legal research methodologies, costs and strategies within the context of Texas law; includes the Texas court system, legislation and legislative history, regulations and regulatory history, agency decisions and websites, treatises, electronic databases, free online resources, court rules, jury instructions, practice materials, and strategies for conducting thorough research.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 7777 LARW III: Criminal Law Drafting**Credits 2. 2 Lecture Hours.**

Using the Code of Criminal Procedure and the Penal Code to draft a variety of documents including a major persuasive motion and response, based on actual criminal cases—warrants, motions and responses, notices, pretrial writs, stipulations and jury instructions.

Prerequisites: LAW 7001, LAW 7002, LAW 7021 and LAW 7065.

LAW 7779 LARW III: Estate Planning and Drafting**Credits 2. 2 Lecture Hours.**

Discussion of hypothetical clinical problems; extensive drafting and professor collaboration; comprehensive planning and drafting of estate planning documents to effectuate the plan.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7076; LAW 7174 or concurrent enrollment.

LAW 778 Counterterrorism**Credits 3. 3 Lecture Hours.**

In-depth look at counterterrorism in China, Colombia, India, Israel, Russia, Spain and the United States; examination of compelling conceptions and definitions of terrorism at the national international level and the institutions and processes relevant to operational counterterrorism.

LAW 7780 LARWIII: Contract Drafting**Credits 2. 2 Lecture Hours.**

Contemporary commercial drafting of contracts; transactional practice useful for litigators; includes translation of a client's business deal into contract language; the organizational paradigm for a formal contract; drafting definitions, covenants, representations, and warranties; deconstructing and marking up contracts; transactional and formbook research; proper use of boilerplate provisions.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7017.

LAW 7781 LARWIII: Patent Law Drafting**Credits 2. 2 Lecture Hours.**

Introduction to the practice of patent prosecution; obtaining a patent from the United States Patent and Trademark Office; follows process from the initial client interview through the issuance of a patent and through post-issuance filings.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7452.

LAW 7782 LARW III: Litigation Drafting**Credits 2. 2 Lecture Hours.**

Practice in drafting of litigation documents expected to be prepared in typical civil litigation cases; utilization of a state trial court forum and the Texas Rules of Civil Procedure; includes conducting client interviews; drafting petitions, answers, and affirmative defenses; propounding written discovery; objecting to and answering written discovery; preparing and arguing motions; preparing other litigation-related documents.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7005.

LAW 7783 LARW III: Real Estate Drafting**Credits 2. 2 Lecture Hours.**

Practice in drafting commonly used real estate documents; emphasis on Texas practice; personal and commercial transactions.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7032.

LAW 7784 LARW III: Trademark Practice**Credits 2 to 3. 2 to 3 Lecture Hours.**

Introduction to the practice of trademark prosecution; registering trademarks with the United States Patent and Trademark Office; development of practical, analytical, and counseling skills in the area of trademark prosecution.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002; LAW 7550 or concurrent enrollment.

LAW 7785 LARW III: Appellate Drafting**Credits 2. 2 Lecture Hours.**

Development of analytical and persuasion skills; emphasis on appellate brief writing and oral advocacy in the appellate court setting; participation in significant oral argument exercises.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 7786 LARW III: Family Law Drafting**Credits 2. 2 Lecture Hours.**

Practice in drafting documents for family law litigation; aspects of litigation examined from pre-trial to appeal.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7301.

LAW 7787 LARW III: Estate Administration Drafting**Credits 2. 2 Lecture Hours.**

LARW III: Estate Administration Drafting. How to open, conduct and close an administration of a decedent's estate under Texas law; includes independent and dependent administrations; probate of the decedent's will; powers, rights, and duties of the personal representative; payment of creditor's claim; informal probate procedures; practical look at how to represent a client who is serving as the personal representative of a decedent's estate or who is a beneficiary of a decedent's estate.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7076.

LAW 7789 LARW III: Drafting for the General Practitioner**Credits 2. 2 Lecture Hours.**

Introduction to the drafting of legal documents that are common to the general practitioner; general knowledge of and proficiency with the typical documents lawyers are asked to draft; practice of drafting techniques common to the various types of legal documents lawyers encounter; "small firm" simulations involving a variety of legal matters including contract drafting, will drafting, negotiation, and settlement of a dispute; development of writing and oral advocacy skills already learned through the production of client letters, lawyer-to-lawyer email communications, and oral settlement negotiations.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 779 Epayments Law and Business**Credits 3. 3 Lecture Hours.**

Exploration of the world of electronic payments with an emphasis on the business models and legal superstructures; consideration of issues and how electronic transfers of value and resolution of transactional disputes occur from various perspectives, including technology, consumers, merchants and financial institutions.

LAW 7790 LARW III: How the Deals Get Done**Credits 2 to 3. 2 to 3 Lecture Hours.**

Transactional law practice using a hypothetical start-up business to help deal with the transactional issues in this context; combination of theory and practice to prepare for typical matters confronted in a transactional law practice.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7001 and LAW 7002; LAW 7056 or Business Associations (four credit-hour course offered prior to Fall 2013).

LAW 7791 LARW III: Business Collections**Credits 2. 2 Lecture Hours.**

Writing and analysis skills for business collection lawsuits; drafting a demand letter, petition, answer, interrogatories, judgment order, application for writ of garnishment and motions for substituted service; default judgment and summary judgment; introduction to negotiation, settlement and trial advocacy skills.

Prerequisite: One year in law school in the full-time or part-time program; LAW 7001, LAW 7002, and LAW 7017.

LAW 7792 LARW III: Criminal Procedure**Credits 2. 2 Lecture Hours.**

Practice of concepts studied in LAW 7005; draft motions to suppress and habeas corpus petitions challenging timely topics.

Prerequisite: One year of law school in full-time or part-time program; LAW 7005.

LAW 7793 LARW III: Public Policy Drafting**Credits 2. 2 Lecture Hours.**

Introduction to the various forms of written (and oral) communication encountered in the public policymaking process, particularly in regulated industries; overview of "public policy" and the various communication strategies and skills necessary to participate in the policymaking process.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7001 and LAW 7002.

LAW 780 Government Contracts**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of federal government contract law; includes contract formation issues, appropriations requirements, contract types, simplified, sealed bid and negotiated procurement methods, competition requirements, contract pricing, protests of awards, contract administration issues and changes, terminations, claims and litigation in federal forums, government fraud remedies and contractor debarments.

LAW 781 International Litigation**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of disputes touching more than one jurisdiction; includes selecting the proper forum, discovery, parallel law suits, choice of law, sovereign immunity, the recognition and enforcement of foreign judgments and arbitration.

LAW 7816 Independent Study**Credit 1. 1 Lecture Hour.**

Specialized reading or research in an area of interest under a full-time faculty member's supervision. May be repeated for credit.

Prerequisites: All lockstep courses.

LAW 7817 Transactional Bootcamp**Credits 2. 2 Lecture Hours.**

A nine-day intensive transactional boot camp involving client simulation; evaluation of the entities available under the Texas Business Organizations Code (TBOC); conducting client intake reviews, preparation of engagement letters for the clients, completing a drafting check list and preparation of formation documents for their chosen entity; focus on LLCs as established under the TBOC, including an in-depth review of the TBOC and its structure.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 7818 Judicial Clerkship Bootcamp**Credits 2. 2 Lecture Hours.**

Preparation to serve as a judicial law clerk; engagement in extensive writing assignments, including opinion drafting and study areas of the law most commonly encountered by judicial law clerks.

Prerequisites: Approval of instructor.

LAW 782 International Trade Law**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of the impact of trade by providing an insight into the questions of Trade Policy; focus on trade agreements of the World Trade Organization; tariffs, subsidies and their effect on trade in goods and services.

LAW 783 International Petroleum Transactions**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of laws, legal issues and principal contracts utilized in the international oil and gas industry in the exploration for production and marketing of oil and gas; practical knowledge of international oil and gas legal issues by working with actual international oil and gas contracts.

LAW 7830 Global Lawyering**Credits 0.50 to 3. 0.50 to 3 Lecture Hours.**

5 to 3. Development of law practice skills in the global environment; focus on completing a project using information that relates to a problem collected through classroom preparation and through meetings at specific locations around the world; basics of international law, comparative law and research in foreign law; combined classroom and field experience.

Prerequisites: Approval of instructor.

LAW 7835 Externship**Credits 2 to 6. 2 to 6 Other Hours.**

Learning opportunities provided through placements in approved legal settings; designed to increase understanding of the range of skills necessary for effective lawyering; improve abilities to perform lawyering skills (e.g., applying an area of law to an actual case); begin to identify and reflect upon the strengths and weaknesses as a practicing student attorney; develop productive working relationships with supervisors, clients, support staff, and peers; reflect on placement experiences through journals and class discussions; placement can be in either courts, public interest organizations, corporate or government offices, or law firms; timesheets and journals submitted every two weeks; classroom component consists of in-class meetings and online discussions. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 7836 Externship**Credits 2. 2 Lecture Hours.**

Learning opportunities provided through placements in approved legal settings; designed to increase understanding of the range of skills necessary for effective lawyering; improve abilities to perform lawyering skills (e.g., applying an area of law to an actual case); begin to identify and reflect upon the strengths and weaknesses as a practicing student attorney; develop productive working relationships with supervisors, clients, support staff, and peers; reflect on placement experiences through journals and class discussions; placement can be in either courts, public interest organizations, corporate or government offices, or law firms; timesheets and journals submitted every two weeks; classroom component consists of in-class meetings and online discussions. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 7837 Externship**Credits 3. 3 Lecture Hours.**

Learning opportunities provided through placements in approved legal settings; designed to increase understanding of the range of skills necessary for effective lawyering; improve abilities to perform lawyering skills (e.g., applying an area of law to an actual case); begin to identify and reflect upon the strengths and weaknesses as a practicing student attorney; develop productive working relationships with supervisors, clients, support staff, and peers; reflect on placement experiences through journals and class discussions; placement can be in either courts, public interest organizations, corporate or government offices, or law firms; timesheets and journals submitted every two weeks; classroom component consists of in-class meetings and online discussions. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 7838 Externship**Credits 4. 4 Lecture Hours.**

Learning opportunities provided through placements in approved legal settings; designed to increase understanding of the range of skills necessary for effective lawyering; improve abilities to perform lawyering skills (e.g., applying an area of law to an actual case); begin to identify and reflect upon the strengths and weaknesses as a practicing student attorney; develop productive working relationships with supervisors, clients, support staff, and peers; reflect on placement experiences through journals and class discussions; placement can be in either courts, public interest organizations, corporate or government offices, or law firms; timesheets and journals submitted every two weeks; classroom component consists of in-class meetings and online discussions. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 7839 Residency Externship**Credits 9 to 12. 9 to 12 Lecture Hours.**

Immersion experience; work full-time in legislature, state or federal government offices, nonprofit organizations, or in-house counsel; work with professor on substantive, procedural and ethical topics relating to externship; development of experience and understanding, in particular policy and legal areas.

Prerequisite: Approval of instructor; specific externships and programs may have additional prerequisites.

LAW 784 LARW III: Environmental Litigation Drafting**Credits 2. 2 Lecture Hours.**

Introduction to a realistic view of the pretrial litigation process in a typical environmental lawsuit; utilization of a state district court forum and the Texas Rules of Civil Procedure; conduction of research and litigation documents drafting from the client's first contact through the pretrial process.

LAW 7841**Credits 5. 5 Lecture Hours.**

Externship. Learning opportunities through placements in approved legal settings which can be applied to real world settings; placements in courts, public interest organizations, corporate or government offices, or law firms; earn one, two or three pass/fail credit hours for every 60, 120 or 180 hours of fieldwork completed, respectively; timesheets and journals are kept and submitted throughout the semester; completion of a classroom component the first time registered for an externship; classroom component consists of in-class meetings and online discussions; online discussions consist of responding to topics posted by professor and responding to peer postings; minor outside reading and/or activity. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of instructor.

LAW 7842 Externship II**Credits 2 to 6. 2 to 6 Lecture Hours.**

Part-time experience work in approved legal and law-related placements such as courts, public interest organizations, corporate or government offices or law firms; work with field and faculty supervisors on substantive, procedural, professional and ethical topics relating to externship; development of skills, experience and understanding in law and law-related areas; engagement in critical reflection to promote self-directed, lifelong learning; must have completed Externship.

Prerequisites: Approval of instructor.

LAW 785 LARW III: Oil and Gas Drafting**Credits 2. 2 Lecture Hours.**

Drafting effective and clear oil and gas contracts; review of basic components and building blocks of contracts; translating the business deal into an oil and gas contract; proposing solutions for problems encountered by counsel in the oil and gas industry.

LAW 7850S Family Mediation Clinic**Credits 3. 3 Lecture Hours.**

Development of mediation skills through lecture and role-play; attendance of some classes in the courtrooms of two family judges; observe and mediate real family disputes at local mediation centers; family mediation certificate given on completion of this course and LAW 7881S. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7851S Wills and Estates Clinic**Credits 2 to 3. 2 to 3 Lecture Hours.**

Real-world experience in handling the estate planning needs of low-income clients; under the supervision of licensed attorneys, interview clients, draft documents including wills, powers of attorney, health care advance directives and other instruments; may handle probate matters.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7076.

LAW 7859 Probate and Estate Planning Clinic**Credits 3 to 6. 3 to 6 Other Hours.**

Representation of low-income clients in estate planning and small estate probate matters under the supervision of licensed attorneys; management of client relationships, interviews and communication with clients about their wills, powers of attorney, health care advance directives and other instruments; interview and counsel clients; instruction in substantive and procedural law, drafting and other core lawyering skills; opportunities to practice during class and clinic office hours; supervision provided by a licensed attorney.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7860 Community Development Clinic**Credits 4 to 6. 4 to 6 Other Hours.**

Focus on social entrepreneurship, transactional real estate work, nonprofit and community advocacy; opportunity to work on a range of legal issues that impact community viability; interview and counsel clients; management of all aspects of client matters; instruction in substantive law, drafting and other core lawyering skills; opportunities to practice during clinic office hours; supervision provided by a licensed attorney.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7861 Community Legal Access Clinic**Credits 2 to 6. 2 to 6 Other Hours.**

Understanding access to justice, helping to develop community legal education materials and providing limited legal assistance to self-represented litigants by working with community organizations.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7862 Criminal Defense Clinic**Credits 4 to 6. 4 to 6 Other Hours.**

In-depth exposure to criminal legal representation; direct representation of individuals facing criminal charges; providing legal counsel in a moment of crisis and the foundational principles of dedicated defense representation; interview and counsel clients; management of all aspects of client matters; instruction in substantive and procedural law, drafting and other core lawyering skills; opportunities to practice during class and clinic office hours; supervision provided by a licensed attorney.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7862S Employment Mediation Clinic**Credits 2. 2 Lecture Hours.**

Further development beyond basic mediation training with opportunities to co-mediate workplace disputes that arise at the Federal Aviation Administration or other agencies; co-mediate three to five disputes, with the assistance of an experienced and trained mediator; review available background documents, meet with co-mediator, and prepare for the mediation. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7863 Trademark Clinic**Credits 3 to 6. 3 to 6 Other Hours.**

Help small businesses protect intellectual property rights in their brands by preparing, filing and prosecuting applications for trademark registration in the U.S. Patent & Trademark Office; addressing client matters, learning substantive law and honing core lawyering skills through practice.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7863S Criminal Prosecution Clinic**Credits 3. 3 Lecture Hours.**

Education and training on the law, legal ethics, and skills involved in state criminal prosecutions; exposure to unique duties and responsibilities of criminal prosecutors as both advocates and ministers of justice; includes substantive, procedural, and ethics-related law relevant to the daily work of prosecutors; lawyering skills employed by prosecutors;

Prerequisite: One year of law school in the full-time or part-time program; completion of at least 45 credit hours; LAW 7080; LAW 7532, LAW 7724, LAW 7725, or concurrent enrollment.

LAW 7864 Patent Clinic**Credits 3 to 6. 3 to 6 Other Hours.**

Help inventors and entrepreneurs secure their intellectual property rights by preparing, filing and prosecuting applications for patent registration in the U.S. Patent & Trademark Office; addressing client matters, learning substantive law and honing core lawyering skills through practice.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7865S Family and Veterans Advocacy Clinic**Credits 4 to 6. 4 to 6 Other Hours.**

Study of practicing law, representing indigent clients in court; focuses on learning skills such as interviewing and counseling clients, mediation, drafting, case review, preparing discovery, trial practice and other core lawyering skills; instruction in substantive and procedural law; opportunities to practice during clinic office hours; supervision provided by a licensed attorney.

Prerequisite: LAW 7091 or concurrent enrollment.

LAW 7867 Entrepreneurship Law Clinic**Credits 3 to 6. 3 to 6 Other Hours.**

Work with entrepreneurs on transactional business matters; emphasis on legal issues involved in starting a business including choice of entity, entity formation, founding and other agreements; interview and counsel clients; management of all aspects of client matters; instruction in substantive and procedural law, drafting and other core lawyering skills; opportunities to practice during class and clinic office hours; supervision provided by a licensed attorney.

Prerequisite: LAW 7091 or concurrent enrollment.

LAW 7868 Trademark and Copyright Clinic**Credits 3 to 6. 3 to 6 Other Hours.**

Work with business owners and creative entrepreneurs on trademark, copyright and other intellectual property matters; interview and counsel clients; prepare, file and prosecute applications for registration in the U.S. Patent & Trademark Office and the U.S. Copyright Office; review and prepare licensing, transfer and related agreements; manage all aspects of client matters; instruction in substantive and procedural law, drafting and other core lawyering skills; opportunities to practice during class and clinic office hours; supervision provided by a licensed attorney.

Prerequisites: LAW 7091 or concurrent enrollment.

LAW 7868S Intellectual Property and Technology Clinic**Credits 2 to 3. 2 to 3 Lecture Hours.**

Emphasis on general trademark and patent issues; includes counseling clients, conducting registerability or patentability searches and preparing trademark or patentability opinions for clinic clients, drafting and filing of trademark or patent applications and response to Office Actions.

Prerequisites: One year of law school in full-time or part-time program; LAW 7350 or LAW 7550 or concurrent enrollment.

LAW 7869 Innocence Project**Credits 2 to 4. 2 to 4 Other Hours.**

Investigation of claims of actual innocence on behalf of Texas inmates; document/transcript review; examining new evidence and locating and re-interviewing witnesses; work closely with Innocence Project of Texas attorneys if cases move into litigation; weekly classroom component explores causes and cures of wrongful convictions.

Prerequisite: LAW 7091 or concurrent enrollment.

LAW 787 Law and Economics**Credits 2 to 3. 2 to 3 Lecture Hours.**

Laws as incentives for changing behavior and instruments for policy objectives; theory to predict effects of legal rules on behavior; efficiency and distribution concerns to evaluate legal policy; basic economics, including Coase Theorem and classical topics such as property, contracts, torts and criminal law.

LAW 788 Legislative Process**Credits 2 to 3. 2 to 3 Lecture Hours.**

Study of three areas of legislating including drafting and statutory construction, research and support groups and procedures; committees, calendars and floor management; committee operations, debate and passage of bills; use of Texas legislative rules handbooks for guide from introduction to passage of legislation; election of a Speaker and Lieutenant Governor.

LAW 7881S Mediation Clinic**Credits 3. 3 Lecture Hours.**

Mediation training following standards promulgated by the Texas Mediation Trainers Roundtable; classroom training and role-playing participation; mediator and disputant perspectives; clinic portion of the training consists of mediations or observations at Dispute Resolution Centers and other locations. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7882 Mediation Skills Workshop**Credit 1. 1 Lecture Hour.**

Intensive participation in simulations and exercises that introduce the mediation process, its stages and the tools and techniques used by mediators and lawyers representing clients in mediation; introduction to core negotiation approaches and techniques.

Prerequisites: One year of law school in the full-time or part-time program.

LAW 7887S Deposition Skills Workshop**Credit 1. 1 Lecture Hour.**

Deposition practice and the strategy behind taking depositions; fundamental depositions skills; rules pertaining to depositions in federal and state court; how to properly notice a deposition; how to depose parties, fact witnesses, and experts; deposition performance class offers opportunity to take and defend a deposition.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005.

LAW 7888S Civil Motion Workshop**Credit 1. 1 Lecture Hour.**

Civil motion practice; research of written motions and responses filed in actual nonactive lawsuits; argument of motions and responses, within appropriate time constraints, in front of a sitting district court judge in Tarrant County; understanding of the law related to each motion; emphasis on oral argument skills and development of a level of comfort arguing motions in an actual classroom.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7005 or concurrent enrollment.

LAW 7889S Scientific Criminal Evidence Workshop**Credit 1. 1 Lecture Hour.**

Theory and practice of using scientific evidence in criminal trials; topics may include the value and use of DNA, mental health, polygraphs, and autopsy evidence; emphasis on understanding, preparing for, and conducting "Daubert hearings" which involve challenges to the admissibility of scientific expert testimony; includes lectures by professor and guest speakers, as well as role-playing of both prosecutors and defense lawyers.

Prerequisite: One year of law school in the full-time or part-time program; LAW 7080 or concurrent enrollment.

LAW 789 Military Justice**Credits 2 to 3. 2 to 3 Lecture Hours.**

Examination of statutes, policies and rules governing military justice process from investigation through trial and appellate process; military criminal procedure and law governing court-martial proceedings; relationship of military courts to civilian courts; use of military commissions for trying enemy combatants for war crimes and other offenses.

LAW 7890 Courthouse Perspectives**Credit 1. 1 Lecture Hour.**

Practical, hands-on study of various courts in the Tarrant County area; includes the Court of Appeals, District Courts (civil, criminal, and family), County Courts (civil, criminal, and probate), and Justice of the Peace Courts; understanding the function, jurisdiction, and personnel of each court; daily lecture at the Court of Appeals by Justice McCoy, followed by visits to the various courts; introduction to judges, court coordinators, and court reporters; possible observation of proceedings in each court visited; emphasis on proper courtroom etiquette and procedural training on topics such as how to actually file a document with a court.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7891S Civil Evidence Workshop**Credit 1. 1 Lecture Hour.**

Practical subjects related to courtroom evidence; instruction, demonstration, and practice in offering common forms of evidence in civil and criminal trials; common objections and responses to courtroom evidence; depositions, statements, and sworn testimony; preserving the record and offers of proof.

Prerequisites: One year of law school in the full-time or part-time program; LAW 7080 or concurrent enrollment.

LAW 7892S Pretrial Motion Workshop**Credit 1. 1 Lecture Hour.**

Learn about and draft three pre-trial motions: Motion to Transfer Venue, Motion to Compel Discovery, and Special Appearance 120a; argue motions in class.

Prerequisite: One year of law school in the full-time or part-time program; LAW 7005 or concurrent enrollment.

LAW 7894 LARW III: Environmental Litigation Drafting**Credits 2. 2 Lecture Hours.**

Introduction to a realistic view of the pretrial litigation process in a typical environmental lawsuit; utilization of a state district court forum and the Texas Rules of Civil Procedure; conduction of research and litigation documents drafting from the clients' first contact through the pretrial process.

Prerequisite: One year in law school in the full-time or part-time program; LAW 7001; LAW 7002; LAW 7005.

LAW 7895 LARW III: Oil and Gas Drafting**Credits 2. 2 Lecture Hours.**

Drafting effective and clear oil and gas contracts; review of basic components and building blocks of contracts; translating the business deal into an oil and gas contract; proposing solutions for problems encountered by counsel in the oil and gas industry.

Prerequisites: One year in law school in the full-time or part-time program; LAW 7444.

LAW 790 Spanish for Lawyers**Credits 2 to 3. 2 to 3 Lecture Hours.**

Preparation of the Spanish proficiency for the practice of immigration law, criminal law or family law; discussion of legal concepts and procedures related to representation of Spanish-speaking clients; review of Spanish vocabulary through simulations of interviewing, counseling and representing Spanish-speaking clients.

LAW 7900 Special Topics**Credits 0 to 4. 0 to 4 Other Hours.**

Special topics in identified areas of law. May be repeated for credit.

Prerequisite: One year of law school in the full-time or part-time program.

LAW 7910 Academic Support Teaching Assistant**Credit 1. 1 Lecture Hour.**

Teaching assistants for the Academic Support Program assigned to work with first-year students in small study groups; helping students with the basic skills necessary to succeed in law school; hold weekly office hours in which they meet with students on an individual basis. May be repeated for credit.

LAW 7911 Professional Identity Teaching Assistant**Credit 1. 1 Other Hour.**

Support the overall planning and execution of the course; supervise a group of approximately 20 1L students who are continuing their study of professional identity in the spring semester; plan and teach two to three small group sessions during the semester; review and grade students' work on networking skills, professional communication with potential employers and further refinement of their professional development plans.

Prerequisites: Approval of instructor.

LAW 792 Dispute Resolution For Business**Credits 1 to 3. 1 to 3 Lecture Hours.**

Theory and practice of three major dispute resolution procedures: negotiation, mediation and arbitration through lecture, simulations and exercises.

LAW 7920 LARW Teaching Assistant**Credit 1. 1 Lecture Hour.**

Teaching assistants work with the first-year Legal Analysis Research and Writing (LARW) classes; help both the professor and the students; attending and monitoring first-year LARW classes, distributing handouts, collecting assignments, reviewing citation exercises and research assignments, having weekly office hours, and meeting with students as needed.

LAW 793 Arbitration**Credits 1 to 3. 1 to 3 Lecture Hours.**

Introduction to the arbitration process; examination of legal framework governing arbitration, policy implications of its expansion and skills necessary to be successful advocate in domestic arbitral forums.

LAW 7930 Law Review**Credit 1. 1 Lecture Hour.**

Encourages legal scholarship on issues of interest to academicians, practitioners, and law students; student editors publish the Texas A&M Law Review with faculty cooperation. May be repeated for credit.

LAW 7931 Law Review Board**Credits 2. 2 Lecture Hours.**

Encourages legal scholarship on issues of interest to academicians, practitioners, and law students; Board of Editors responsible for the operation, supervision, editing, and publication of the Law Review with faculty cooperation. May be repeated for credit.

LAW 7932 Journal of Property Law Board**Credits 2. 2 Lecture Hours.**

Scholarly publication Journal of Property Law dedicated to promoting academic discussions of real property law; exploration of the relationships arising from ownership, possession, and use of real property; Board of Editors responsible for the operation, supervision, editing, and publication of the Journal of Property Law with faculty cooperation.

LAW 7933 Journal of Property Law**Credit 1. 1 Lecture Hour.**

Scholarly publication Journal of Property Law dedicated to promoting academic discussions of real property law: exploration of the relationships arising from ownership, possession, and use of real property. Participation limited to those who meet specific academic requirements and selected through a writing competition.

LAW 794 Cannabis Law, Policy & Business**Credits 1 to 3. 1 to 3 Lecture Hours.**

Cannabis Law, Policy & Business. Exploration of the legal, policy and business issues of the new marijuana entrepreneurial ventures through a quickly evolving landscape of law, regulation and business constraints and the role of lawyers in helping clients achieve their goals.

LAW 795 Mediation: Theory, Law and Ethics**Credits 1 to 3. 1 to 3 Lecture Hours.**

Examination of the law and ethics of mediation, relevant social psychological and economic theories and empirical research and the dynamics, law and ethics of representing clients in mediation; focus on mandatory mediation, the requirement to mediate in good faith, enforceability of mediated agreements, confidentiality and the mediation privilege, legal or mediation malpractice occurring in the context of mediation, whether new variations of mediation are truly mediation, and lawyers' and mediators' ethical obligations.

LAW 7957S ADR Competition**Credit 1. 1 Lecture Hour.**

Development of advocacy skills via competition against students from other law schools across the nation. May be repeated for credit.

LAW 796 Borderlands Law**Credits 1 to 3. 1 to 3 Lecture Hours.**

Survey of contemporary legal issues relating to the U.S.-Mexico border; topics include trade, transportation, business, banking, immigration, border security, crime, human rights, oil and gas, energy, water, the environment and the Mexican legal system.

Prerequisites: Approval of instructor.

LAW 7960S Mock Trial Competition**Credits 2. 2 Lecture Hours.**

Development of advocacy skills via competition against students from other law schools at the state and national level. May be repeated for credit.

LAW 7961S Mock Trial Competition**Credit 1. 1 Lecture Hour.**

Development of advocacy skills via competition against students from other law schools at the state and national level. May be repeated for credit.

LAW 7963S Mock Trial Competition**Credits 3. 3 Lecture Hours.**

May be repeated for credit.

LAW 797 Fashion Law**Credits 1 to 3. 1 to 3 Lecture Hours.**

Overview of legal issues related to the fashion industry; emphasis on the analysis of intellectual property aspects including trademarks, design and copyright of the protection of fashion items; includes the growing movement of sustainable fashion as well as the potential impact of disruptive technologies, such as 3D printing on the manufacturing and distribution of fashion items.

LAW 7970S Moot Court Competition**Credit 1. 1 Lecture Hour.**

Development of advocacy skills via competition against students from other law schools at the state and national level. May be repeated for credit.

LAW 7971S Moot Court Competition**Credits 2. 2 Lecture Hours.**

Development of advocacy skills via competition against students from other law schools at the state and national level. May be repeated for credit.

LAW 7972 Moot Court Competition Brief Writer**Credit 1. 1 Lecture Hour.**

Development of advocacy skills via competition against students from other law schools at the state and national level. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 7973 Moot Court Competition Brief Writer**Credits 2. 2 Lecture Hours.**

Development of advocacy skills via competition against students from other law schools at the state and national level. May be repeated for credit.

Prerequisite: Approval of instructor.

LAW 798 Navigating Business-Government Litigation**Credit 1.5. 1.5 Lecture Hour.**

Fundamental elements involved when plaintiffs bring civil claims against states, cities and government agencies; issues examined from the plaintiffs' and defendants' perspectives.

LAW 799 Law Transfer Institutions**Credits 2. 2 Lecture Hours.**

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LBAR - College of Liberal Arts

LBAR 600 Liberal Arts Study Abroad**Credits 1 to 9. 1 to 9 Lecture Hours.**

For students in approved programs to study abroad.

Prerequisites: Graduate classification; approval of department head.

LBAR 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of liberal arts. May be repeated for credit.

LBAR 698 Writing for Publication**Credits 3. 3 Lecture Hours.**

Writing in academic disciplines and settings. Writing for different audiences and purposes, Style; planning and development of journal articles; grant proposals; correspondence; oral presentations; technical reports. Permission of departmental/college graduate advisor.

Prerequisite: Advanced standing in master's/doctoral programs.

LDEV - Land Development

LDEV 644 Market Analysis for Development**Credits 3. 3 Lecture Hours.**

Techniques and data sources for market analysis for development; analysis for housing development; trade area analysis and market analysis for retail development; analysis for office, industrial parks and for specialized development. Classification 6 students may not enroll in this course.

Prerequisites: Enrollment in MRE program; FINC 670.

LDEV 661 Development and the Environment**Credits 3. 3 Lecture Hours.**

Land development in the context of environment sustainability, human well being and business profitability to foster a restorative economy; environmental easement and site analysis; state, federal and international regulatory issues; and human ecology and the future of land development.

Prerequisite: Graduate classification.

LDEV 663 Introduction to Project Management**Credits 3. 3 Lecture Hours.**

Project management processes for planning, scheduling, cost estimating resource leveling, cost control and post-completion evaluation; issues in project organizational environments, documentation, quality control safety.

Prerequisite: Graduate classification.

LDEV 664 Market Analysis for Development**Credits 3. 3 Lecture Hours.**

Techniques and data sources for market analysis for development; analysis for housing development; trade area analysis and market analysis for retail development; analysis for office, industrial parks and for specialized development.

Prerequisite: Graduate classification.

LDEV 665 Land Development Trends**Credits 3. 3 Lecture Hours.**

Exploration of a variety of specialized topics associated with emerging trends in the land development industry.

Prerequisite: Graduate classification.

LDEV 667 Design and Development Economy**Credits 3. 3 Lecture Hours.**

Interface between the physical and financial dimensions in the design and development process to achieve building and project economics; creating a physical product and a financial venture that responds to social and environmental concerns and to market economy and feasibility analysis.

Prerequisite: Graduate classification.

LDEV 668 Land Development Practice**Credits 3. 3 Lecture Hours.**

Strategies, methods and techniques of land development including: site selection criteria, urban infrastructure; market evaluation; conceptual arrangement of land uses and structures; conceptual design and regulatory considerations; lending institutions; location theory; value theories; regulatory agencies.

Prerequisite: LDEV 667.

LDEV 669 Income Property Land Development**Credits 3. 3 Lecture Hours.**

Exploration of the characteristics of real estate as an investment, venture and capital structures, the development process, site and financial feasibility, and project funding; strategies, methods and technologies for investment property development utilizing current developments.

Prerequisite: Graduate classification.

LDEV 671 Sustainable Development**Credits 3. 3 Lecture Hours.**

Sustainability perspectives about values, rights, property and what constitutes an optimum human environment; sustainability principles and case studies emphasizing on-the ground, incentive-based land development that balances economic growth with environmental quality.

Prerequisite: Graduate classification.

LDEV 672 Public-Private Project Funding**Credits 3. 3 Lecture Hours.**

Financing and related issues in public-private development projects; explores structuring, valuing and managing projects and investigates the interaction between suppliers, operators, lenders and contractors; introduction to financial tools: loans, credit, interest rates and financial models.

LDEV 673 International Development Planning**Credits 3. 3 Lecture Hours.**

International variations in urban growth and land development strategies: savings, aid and trade policy options for cities and regions; international co-development programs; application of planning and urban land development professions in contemporary global context.

Prerequisite: Graduate classification.

LDEV 681 Seminar**Credit 1. 1 Lecture Hour.**

College of Architecture research activities pertaining to land and real estate development; preparation and presentation of required final paper for MS in Land Development examination.

Prerequisite: Graduate classification in land development.

LDEV 684 Professional Internship**Credits 1 to 12. 1 to 12 Other Hours.**

Professional practice under approved arrangement with public or private land or real estate development agencies in the United States or abroad.

Prerequisites: Approval of committee chair and program coordinator.

LDEV 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Individual and group problems dealing with application of strategic plan development theory in practice: opportunities to select international or domestic development projects of special interest.

Prerequisite: Approval of instructor.

LDEV 687 Development Feasibility and Design**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Selected residential and non-residential development projects of varying size analyzed by teams with respect to the following: economic feasibility and cash flow; site analysis; and design concept.

Prerequisite: Approval of instructor.**LDEV 688 Development Feasibility and Design II****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Plans and venture structures for selected residential and non-residential development projects of varying size analyzed by multidisciplinary teams with respect to the following: economic feasibility and cash flow and site and design plans and costs.

Prerequisite: LDEV 687 or approval of instructor.**LDEV 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of land development. May be repeated for credit.

Prerequisite: Approval of instructor.**LDEV 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

PhD research and preparation of dissertation.

Prerequisite: Doctoral classification.**LDEV 693 Professional Study****Credits 1 to 6. 1 to 6 Other Hours.**

Approved professional case study of project organization in the USA or abroad undertaken as terminal requirement for the Master of Science in land development degree, non-thesis option.

Prerequisites: Approval of committee chair and associate department head.

LING -Linguistics

LING 602 Topics in Sociolinguistics**Credits 3. 3 Lecture Hours.**

Topics in the study of language and society; may focus on language use and change; how social variable affect language use and change; different theoretical approaches; issues and controversies. May be taken three times for credit as content varies.

LING 610/ENGL 610 Topics in the History of the English Language**Credits 3. 3 Lecture Hours.**

Topics in the development of the English language; may include phonological, grammatical and lexical histories; study of social and political contexts; relationships between English and other languages. May be taken three times for credit as content varies.

Cross Listing: ENGL 610/LING 610.**LING 670 Topics in Discourse Analysis****Credits 3. 3 Lecture Hours.**

Topics in linguistic and discourse analysis; possible topics include discourse and identity, language and gender, register studies, ethnography of communication, linguistics and literature. May be taken three times for credit as content varies.

LING 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Readings to supplement the student's knowledge of English language and linguistics in areas not studied in other courses.

Prerequisites: Graduate classification and approval of department head.

MARA - Maritime Administration

MARA 604 Marine Natural Resource Economics**Credits 3. 3 Lecture Hours.**

Critical evaluation of policies and procedures in the development and use of natural resources relevant to marine and maritime markets; identification of problems in resource exploration, development, and transportation; the political /economic decision-making processes; analytical tools used to make economic decisions in resource markets.

Prerequisite: Graduate status or special approval.**MARA 610 International Strategic Planning and Implementation****Credits 3. 3 Lecture Hours.**

An introduction to the strategic management process, with an emphasis on the maritime industry in the domestic and international context. The formulation of strategy in the context of environmental opportunities and threats, how to analyze industry competition, and how to implement strategies and build competitive advantage. Students will select a company engaged in domestic or international waterborne commerce and analyze the strategic planning processes of the firm using the standard techniques such as SWOT analysis, the Five Forces model and the Value Chain analysis.

Prerequisite: Approval of instructor, graduate status or special approval.**MARA 616 Management of Port Facilities and Infrastructure****Credits 3. 3 Lecture Hours.**

Problems associated with the management of buildings, piers, bulkheads and associated structures and connecting waterways focusing on corrosion, adverse affects of climate, tide and current affects, dredging cycles and related facilities access issues associated with structures in the coastal zone. Particular attention is paid to the requirements of state and federal agencies regarding equipment and facilities used in the safe loading, discharge, and storage of cargoes, including hazardous materials.

Prerequisite: Approval of instructor, graduate status or special approval.**MARA 623 Economic Issues in Shipping****Credits 3. 3 Lecture Hours.**

Economics Issues in Shipping. The role of domestic and international shipping in the American economy; discussion of the economic characteristics of waterborne transportation, including the nature of transport demand and cost functions; economic dimension of transport service; transport market structures; and transport pricing theory and practice. Emphasis on managerial implications of transport economic principles for domestic and international shipping.

Prerequisite: Approval of instructor, graduate status or special approval.**MARA 624 Intermodal Transportation Operations****Credits 3. 3 Lecture Hours.**

Survey of economic and operational characteristics of intermodal transportation, rail, trucking, air, shipping, and pipelines. Emphasis on the interface of surface transportation with the maritime industry; pricing strategies, cost structures, and regulatory issues.

Prerequisite: Approval of instructor, graduate status or special approval.**MARA 627 Marketing of Transportation Services****Credits 3. 3 Lecture Hours.**

Marketing planning and analysis applicable to the service firm; assessment of customer needs; quality control; competitive strategies; applications of marketing principles and practices to the maritime industry.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 636 Managerial Decision Making**Credits 3. 3 Lecture Hours.**

Construction of mathematical models of business environments; linear programming techniques; planning, analysis and control of operations in complex organizations through mathematical techniques.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 640 Global Logistics**Credits 3. 3 Lecture Hours.**

Transportation and logistic activities of multinational firms with an emphasis on transportation, customer service, inventory control facility location, global sourcing, customs documentation, and the role of government in importing and exporting. Attention is given to current events and their effects on the marketing and logistics activities of U.S. based organizations.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 641 Financial Management in Marine Transportation**Credits 3. 3 Lecture Hours.**

Management of the corporation's sources and uses of funds with emphasis on risk and return, investment valuation, the selection of risky investment projects, capital structure, dividend policy, and methods of raising long-term capital; applications to the maritime industry are made where appropriate.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 650 Supply Chain Management**Credits 3. 3 Lecture Hours.**

Contemporary distribution logistics and integrated supply chain management; emphasis on customer service, transportation modes, inventory policies, warehousing, order processing and optimizing the logistics gross margin.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 652 Marine Transportation System Design and Policy**Credits 3. 3 Lecture Hours.**

Course Description: Interaction between shipping policy and design of marine transportation and port systems; effects of market structure on economics and finance; port performance and performance measures.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 658 Port Design, Planning and Security**Credits 3. 3 Lecture Hours.**

Ground-level issues, tasks, and responsibilities that must be managed by the security manager in concert with the port director and federal and local law enforcement agencies; multiuse port facilities for recreation, hospitality, and external business and commercial interests; design of marine structures for the berthing, mooring, and repair of vessels.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 660 Risk Assessment and Marine Insurance**Credits 3. 3 Lecture Hours.**

Theory, techniques, participants and background of risk assessment and management with emphasis given to contemporary issues in marine insurance law; marine liability coverage, cause of loss, additional perils, exclusions, warranties, duration of risk, adjustment clauses, operating clauses, civil commotions, war insurance, and project risk management techniques.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 664 Production, Operations and Logistics Management**Credits 3. 3 Lecture Hours.**

Production, Operations, and Logistics Management. Types of decisions to be made at varying levels and where appropriate; quantitative models and techniques that can be used in decision making areas of the firm; analysis of how the operations function fits in with other functional areas of the firm; interrelationships with firms' strategies.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 670 Coastal and Inland Waterways Transportation**Credits 3. 3 Lecture Hours.**

Policy, strategy and management, port and terminal development, competition with other modes of transportation, manpower, rates, environmental concerns, the impact of waterway systems on regional economies and national economic development; commercial aspects of the inland waterways with emphasis on operations, freight rate structures and applied cash flow methods.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 672 The Maritime Global Trading System**Credits 3. 3 Lecture Hours.**

Introduction to the theory of international waterborne trade; provides a basis for examining American foreign trade policy, and regional and world trade institutions such as the WTO, ASEAN, the EU, GATT, and NAFTA. Topics include: International trade theory and policy, open-economy macroeconomic policy, tariffs, non-tariff barriers and enhancements, multinational enterprises and foreign direct investment, global competition and integration.

Prerequisite: Approval of instructor, graduate status or special approval.

MARA 673 International Maritime Industry Graduate Management Experience**Credits 1 to 4. 1 to 4 Lecture Hours.**

Combines classroom and graduate research work with international travel and provides the student direct contact with maritime industry managers. The trip emphasizes cultural and historical aspects of the maritime industry outside of the United States providing a better understanding of differing management styles, business practices, and regulatory focus.

Prerequisite: Graduate status.

MARA 675 Leadership in the Maritime Industry**Credits 3. 3 Lecture Hours.**

Focus on theory and real world practice of leadership; recognize components of leadership, management and labor; the basis of leadership authority, values and styles as applied to organizational vision, mission and life cycle; assess own leadership traits in preparation of entering work force.

Prerequisite: Graduate classification or approval of instructor.

MARA 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

On the job training in the field of maritime administration and logistics.

Prerequisites: Graduate classification; approval of department head.

MARA 685 Directed Studies**Credits 1 to 6. 1 to 6 Lecture Hours.**

Selected topics in an identified area of Maritime Administration and Logistics not covered in another course curriculum.

Prerequisite: Approval of instructor.

MARA 689 Special Topics In Maritime Administration**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in identified area of Maritime Administration.

Prerequisites: Graduate classification and instructor permission.

MARA 691**Credits 1 to 4. 1 to 4 Lecture Hours.**

Research in Maritime Administration. For thesis or dissertation.

Prerequisite: Approval of instructor, graduate status or special approval.

MARB - Marine Biology

MARB 603 Cetacean Behavior and Behavioral Ecology**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Consists of lectures, readings and discussion sessions on the social, calf rearing, foraging and migrating strategies of whales, dolphins and porpoises. Emphasis is on the recent literature of animals in nature, although results from aquaria are also presented with comparisons to social strategies in the wild.

Prerequisite: Undergraduate or graduate level vertebrate biology course.**MARB 604 Behavioral Ecology of Marine Mammals and Seabirds of New Zealand****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Ecology and behavior of marine birds and mammals of South Island, New Zealand; literature comparisons of marine vertebrates; emphasis is on animals in nature; laboratory experience of the animals from boats and shore; readings, videos, interpretation and peer-review of scientific papers and books.

Prerequisites: Graduate standing and permission of instructor.**MARB 605 Air Breathing Marine Vertebrate Research Techniques****Credits 3. 3 Lecture Hours.**

Introductory and advanced descriptions and hands-on learning of photo-identification, theodolite, radio, satellite, and video-enhanced tracking, underwater remote sensing, acoustics, and other cutting edge research techniques.

Prerequisite: Graduate classification or approval of instructor.**MARB 606 Advanced Concepts in Marine Population Biology****Credits 3. 3 Lecture Hours.**

Novel Approaches and concepts employed studying factors affecting recruitment, determining trophic relationships (e.g., stable isotopes), and the consequences, at various levels, of changes in abundance of marine populations, including ecological (community), population (Allee effects) and genetic (effective population size). Inference of population connectivity determined through the use of electronic tags and molecular techniques is also examined.

Prerequisite: B.S. Marine Biology or Marine Science or approval of instructor.**MARB 607 Research and Conservation in Greece-Dolphins, Fisheries and Cultural Heritage****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Lectures, readings and labs on the ecology and behavior of the vertebrate fauna of Greece; laboratory hands-on experience of the marine environment from boats, readings, videos, interpretation and select major peer-review scientific papers and books.

Prerequisite: Approval of instructor.**MARB 610 Professional Development****Credits 3. 3 Lecture Hours.**

Course will cover topics including proposal and manuscript development, the peer review process, proposal writing and speaking exercises, preparing oral and poster presentations, developing questions for quizzes and midterms, and library database management. Class discussions will include constructive critiques of participants' experimental designs, analytical approaches and scientific writing.

Prerequisite: Graduate standing or permission of instructor.**MARB 615 Coastal Marine Biology and Geology of Alaska****Credits 3. 3 Lecture Hours.**

The study of coastal marine biology and geology of south-central Alaska and participation in a behavioral ecological study of sea otters for 12 days at a remote field station in north-eastern Prince William Sound.

Prerequisite: Graduate classification and approval of instructor.**MARB 616 Introduction to Methods in Scientific Diving****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

This course prepares students to use SCUBA as a research tool for the marine sciences in compliance with University, American Academy of Underwater Sciences and Federal OSHA standards. Practical work in pool and open waters will complement academic experience and provide training towards scientific diver status.

Prerequisite: Advanced scuba certification.**MARB 617 Research Diving Methods****Credits 2. 6 Lab Hours.**

Field experience in a wide range of research diving environments stressing dive planning and safety, buoyancy control, equipment configuration and scientific methodology in biological, physical, chemical, archaeological and geological sciences. Students will design, supervise and conduct independently developed scientific diving projects.

Prerequisite: MARB 616 or equivalent.**MARB 618 Marine Science of the Pacific Rim****Credits 3. 3 Lecture Hours.**

Course intended for students interested in conducting research on the marine biology or fisheries of the Pacific Rim countries; tailored to specific interests of individual students; course involves directed readings, participation in the student's research project, discussions with the instructor, and final report for possible publication.

Prerequisite: Graduate status or approval of instructor.**MARB 620 Marine Biological Resources****Credits 3. 3 Lecture Hours.**

An introduction to biological resources which can be recovered from the marine environment to provide food, biomass and materials, recreation, and employment to the coastal United States and other regions. With emphasis on fisheries and hatcheries, in: oceanic resources, coastal and estuarine resources, and mariculture. Natural and societal limitations to resource recovery are investigated, and environmental impacts are analyzed.

Prerequisites: (at least 3 of these) CHEM 102, BIOL 112, GEOL 104 and/or OCNG 251; graduate status or special approval.**MARB 633 Applied Bioinformatics****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Fundamental concepts and methods in bioinformatics using sequence analysis and practical applications; includes biological databases, sequence and structure alignments, structural bioinformatics, gene prediction and genome analysis; emphasis on the understanding and application of these concepts.

Prerequisites: Graduate classification or approval of instructor.**MARB 635 Marine Invertebrate Zoology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

General biology of marine invertebrate animals; morphology, evolution and systematics; laboratory stresses study of local fauna.

Prerequisite: Graduate classification.

MARB 640 Ecosystem Functions in Marine Environments**Credits 3. 3 Lecture Hours.**

Advanced study of ecological processes in marine environments, with an emphasis on the investigation of the interactions between organisms and physical processes that regulate marine ecosystem functions.

Prerequisite: Graduate standing.**MARB 651 Shore and Estuarine Fishes of the Gulf Of Mexico****Credits 4. 2 Lecture Hours. 6 Lab Hours.**

Taxonomy, ecology and zoogeography of fishes inhabiting estuarine and marine ecosystems of the northwestern Gulf of Mexico. Particular emphasis on community structure and factors affecting spatial and temporal abundance of fishes found along the Texas coast.

Prerequisites: MARB 311 or equivalent; approval of instructor.**MARB 654 Coastal Plant Ecology****Credits 3. 3 Lecture Hours. 0 Lab Hours.**

Study of estuarine, coastal and dune plant communities and associated environmental factors affecting plants including the identification, distribution, ecological importance and management techniques of vascular plants in these communities.

Prerequisites: Graduate standing; approval of instructor.**MARB 655 Wetlands Ecology, Monitoring and Delineation****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Wetlands Ecology, Monitoring, and Delineation. Study of the characteristics and importance of wetlands, and methods of delineating, monitoring and evaluating wetlands. Students will learn wetland plants, soils, hydrology, ecology, inhabiting animals, delineation techniques, laws, permits required for impacts, mitigation and management techniques.

Prerequisite: Graduate standing.**MARB 656 Tropical Marine Ecology****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Topical Marine Ecology. Field oriented experience in coral reef, mangrove, sea grass, cave and other tropical marine ecosystems. Special emphasis will be placed on biodiversity, ecology and conservation issues specific to the Yucatan Peninsula of Mexico. This course will involve one week of course work in Galveston and a two-week field trip to Akumal on the Caribbean coast of Yucatan. Students will design, supervise and conduct an independently developed research project.

Prerequisite: Scuba Certification.**MARB 662 Biology of the Mollusca****Credits 3. 3 Lecture Hours. 3 Lab Hours.**

Survey of mollusks including their morphology, ecology, physiology and reproduction. Emphasis on marine species of ecological and commercial importance.

Prerequisite: MARB 435 or MARB 665 or equivalent.**MARB 665 Biology of Invertebrates****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Biology of Vertebrates. Morphology, biology and phylogeny of invertebrates. Topics may be either detailed discussions/dissections of specific organisms or comparative information on a process.

Prerequisites: MARM 435 or ZOOL 335 or equivalent; approval of instructor.**MARB 667 Biology of Marine Annelida****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Survey of Marine Annelids including their behavior, organ systems physiology and reproduction. Emphasis on morphology and taxonomy of polychaetous annelids to enable students to move more rapidly and accurately analyze benthic assemblage data.

Prerequisites: MARM 435 or ZOOL 335 or equivalent; approval of instructor.**MARB 668 Marine Evolutionary Biology****Credits 3. 3 Lecture Hours.**

Lecture, readings, and discussions on advanced evolutionary topics including history of evolutionary thought, organic evolution, evolutionary methods, and modern applications to organismal evolutionary questions. Students will lead and participate in journal club style discussion of selected recent literature.

Prerequisite: Graduate standing.**MARB 669 Adaptations in Extreme Environments****Credits 3. 3 Lecture Hours.**

Key metabolic and physiological innovations of extremophile organisms; topics include the molecular biology, biochemistry and physiology of organisms living in extreme environments.

Prerequisites: Graduate classification or approval of instructor.**MARB 681 Seminar in Marine Biology****Credit 1. 1 Lecture Hour.**

Detailed reports on specific topics within the field of marine biology. Students may register in no more than two sections of this course in a given semester.

Prerequisite: Graduate Standing.**MARB 684 Professional Internship****Credits 1 to 9. 1 to 9 Other Hours.**

On the job training in the field of marine biology.

Prerequisites: Graduate standing; approval of instructor.**MARB 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Limited investigations in fields other than those chosen for the thesis or dissertation topic. May be repeated for credit.

Prerequisites: Graduate standing; approval of instructor.**MARB 689 Special Topics in****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of marine biology.

Prerequisites: Graduate standing; approval of instructor.**MARB 691 Research for Thesis or Dissertation****Credits 1 to 9. 1 to 9 Other Hours.**

MARB 691 is the designated field and/or laboratory research leading to the M.S. or Ph.D. degree. MARB 691 may be offered by any faculty member in MARB and may be offered as many times as necessary in a given semester. MARB 691 may be repeated for credit by a student.

Prerequisites: Graduate standing; approval of instructor.

MARS - Marine Science

MARS 601 Teaching Environmental Sciences**Credits 3. 2 Lecture Hours. 4 Lab Hours.**

This course will concentrate on the basic principles of environmental education using a hands-on approach to learn environmental principles and how to teach them. This course will have a special emphasis on coastal issues.

Prerequisite: Graduate status or approval of instructor.

MARS 602 Environmental Economics and Oceanography**Credits 3. 3 Lecture Hours. 0 Lab Hours.**

An introductory fundamentals course for Marine Resources Management students; primary concepts of economics and oceanography with emphasis on their applications to physical and living resources. Writing assignments and case studies.

Prerequisite: Graduate status or approval of instructor.

MARS 603 Quantitative Methods for Resource Management**Credits 3. 3 Lecture Hours.**

Comprehensive introduction to descriptive and inferential statistical techniques; regression models; quantitative data analysis; research designs essential for understanding resource management and policy related issues.

Prerequisite: STAT 303 or equivalent introductory undergraduate quantitative methods course.

MARS 604 Quantitative Methods for Resource Management II**Credits 3. 3 Lecture Hours.**

Continuation of a two semester sequence course; extends knowledge of quantitative methods beyond basic statistical inference and the linear regression models; advanced topics and quantitative methods used for resource management and policy related research; emphasis on panel data models, random effects and fixed effects models, spatial regression analysis, instrumental variable model, nonlinear models and maximum likelihood estimation, binary and multinomial response models and regression models for count data.

Prerequisite: MARS 603 or approval of instructor.

MARS 610 Environmental Law**Credits 3. 3 Lecture Hours.**

This course is designed to provide a broad overview of basic environmental laws including statutes, regulations, and cases. It also focuses on the both economic and ethical issues within the context of environmental law and policy.

Prerequisite: Approval of instructor; graduate status or special approval.

MARS 615 Physical and Geochemical Marine Resources**Credits 3. 3 Lecture Hours.**

Location, identification, extraction and exploitation of non-fisheries marine resources, including: water, salt, hydrocarbons, minerals, energy from the thermal, wave, tidal, current and wind fields, chemical compounds, pharmaceuticals, and construction materials in estuarine, coastal and open ocean areas.

Prerequisites: CHEM 102, GEOL 104, OCNG 251 or equivalent. Graduate status or approval of instructor.

MARS 620 International Environmental Business Ethics**Credits 3. 3 Lecture Hours.**

Ethical issues that may arise in environmental business transactions; case studies, both real and hypothetical.

Prerequisite: Approval of instructor or graduate status.

MARS 625 GIS Use in Coastal Resources**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

GIS Use in Coastal Resources. Basic concepts of design, planning, and implementation of Geographical Information Systems; computer hardware and software evaluation; practical experience in data entry, analysis and update of spatial and characteristic data; use of maps and remotely sensed data as data.

Prerequisite: Any computer science course or equivalent; graduate status or special approval.

MARS 626 Advanced GIS for Coastal Systems**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Conceptual and technical expansion of GIS and spatial analysis methods; hands on experience with multidisciplinary data sets relevant to coastal systems; spatial and statistical methods, creation, manipulation and analysis of various datasets that address the interaction of human and natural systems in coastal habitats.

Prerequisite: MARS 625 or similar course; graduate status or approval of instructor.

MARS 635 Environmental Impact Statements and Natural Resource Damage Assessment**Credits 3. 3 Lecture Hours.**

The course presents an overview of: a) environmental impact statements (EIS) under the National Environmental Policy Act (NEPA); and b) natural resource damage assessment (NRDA) under the Oil Pollution Act of 1990 (OPA 90) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). It is designed to cover requirements for a wide variety of EISs. NRDA hypothetical cases will be presented in which students are asked to calculate assessments.

Prerequisite: Approval of instructor; graduate status or special approval.

MARS 638 Avian Diversity and Habitats as Coastal Resources**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Avian Diversity and Habitats as Coastal Resources. The lecture and readings will emphasize field identification, habitat requirements for native and migrant species and birds as bioindicators of habitat health and environmental stress. We will apply the study of bird diversity to environmental monitoring of coastal ecosystems and migrant stopover habitats. Labs will be conducted primarily in the field.

Prerequisites: BIOL 112, MARM 315 or WFSC 302 or ZOOL 318 or approval of instructor; graduate status.

MARS 640 Environmental Administrative Law**Credits 3. 3 Lecture Hours.**

Environmental law is governed, in large part, by administrative law. This course covers the processes involved in administrative environmental law. The primary focus of this course will be on: the Environmental Protection Agency, the U.S. Coast Guard, the Corps of Engineer; and NOAA. A review of international administrative bodies will also be included.

Prerequisites: Approval of instructor; graduate status or special approval.

MARS 645 Wildlife Law and Ethics**Credits 3. 3 Lecture Hours.**

This course provides an overview of the basic wildlife laws including international regimes, bilateral and multilateral treaties, conventions, and cases dealing with conservation, preservation, and management of non-Homo sapien species; federal law, regulations, and cases; and a sampling of state law. It also focuses on the ethical issues of species management.

Prerequisites: Approval of instructor; graduate status or special approval.

MARS 648 Invasive Species**Credits 3. 3 Lecture Hours.**

The science and management of biological invasions, history and success rates including vectors and theories with positive and negative biological, ecological, economical and societal impacts. Invasive species as threats to natural areas and communities. Management theories and regulatory strategies and their effectiveness. Emphasis on marine invasive species. Prerequisite: Graduate status.

MARS 650 Geochemical Marine Resources Management**Credits 3. 3 Lecture Hours.**

The purpose of this course is to provide an overview of the issues involved in geochemical marine resources management. This course explores the management of exploration, production, and protection of the geochemical marine resources of the earth and the interface of the many players.

Prerequisites: Approval of instructor; graduate status or special approval.

MARS 652 Sustainable Management of Coastal Margins**Credits 3. 3 Lecture Hours.**

The class will study federal, state, and local laws, regulations, ordinances and programs pertaining to management of coastal margins, visit the Texas General Land Office, attend meetings of the Coastal Coordinating Council, the Texas Legislature when a coastal-related bill is being debated, or attend the Galveston County Commissioner's Court or Galveston City Council when a coastal ordinance is being considered.

Prerequisite: Approval of Instructor.

MARS 655 Wetlands Management**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

This course surveys the interrelationship of chemistry, physics, geology and biology of coastal wetland systems and explores and defines the context of wetlands sustainability and management. Field exercises are an integral component providing students "hands on" experiences. Guest lectures, seminars and field trips lead by agency personnel who are experts in these fields of research are included.

Prerequisite: Background in chemistry, physics, geology and biology.

MARS 656 Coastal Water Policy**Credits 3. 3 Lecture Hours.**

History, past and present legislation, the government entities and agencies molding the policies affecting coastal water policy in Texas.

Prerequisite: Graduate classification or approval of instructor.

MARS 658 Fisheries Management Strategies**Credits 3. 3 Lecture Hours.**

International and U.S. federal and selected state fishery management strategies; history of fisheries, jurisdictional issues, eco-system approaches and case studies.

Prerequisite: Graduate standing or approval of instructor.

MARS 660 Environmental Conflict Resolution**Credits 3. 3 Lecture Hours.**

Origins and development of alternative environmental conflict resolution, a range of conflict resolution strategies for environmental conflict and the nature and process of environmental conflict resolution for both domestic and international disputes, across multiple issue areas and involving multiple scales - local, state, and national; emphasis on negotiation and mediation tactics of conflict resolution.

Prerequisites: Graduate classification or approval of instructor.

MARS 670 Eco-Environmental Modeling**Credits 3. 3 Lecture Hours.**

Biological organisms are surrounded by chemical and physical environments which are influenced by the bio-system and flows of energy, water, and chemical species. Coupling to atmospheric, aquatic, and terrestrial systems is important. Modeling entails both mathematical tools and the underlying science. This course focuses on scientific models, from the simplest to more elaborate.

Prerequisites: BIOL 111, 112; CHEM. 101, 102; MATH 151, and 161 or 166; graduate status or special approval.

MARS 675 Environmental Management Strategies**Credits 3. 3 Lecture Hours.**

The elements of EMS strategist's skills, including what environmental laws may be triggered by scientific activities; the fundamental structure of an EMS; EMS alternatives; concepts in an audit; uses of an effective EMS to reduce costs and increase profits.

Prerequisites: Approval of instructor or graduate classification.

MARS 676 Environmental Policy**Credits 3. 3 Lecture Hours.**

This course will provide a general introduction to the basic concepts and mechanisms of international and U.S. federal environmental law and policy. It will survey the field and its development as well as focus on case studies that illustrate the basic types of environmental problems.

Prerequisites: Approval of instructor; graduate status or special approval.

MARS 680 Integrative Analysis in Marine Resources**Credits 2. 2 Lecture Hours.**

Integrative Analyses in Marine Resources. Review of public policy change mechanisms in marine resources management, including Congressional testimony, agency recommendations and structure, and NGO reports. Students propose and defend a public policy change with detailed documentation and an oral presentation demonstrating a professional understanding of marine resources issues within the context of current law.

Prerequisites: 24 hours of MARM course credits completed, or in concurrent enrollment, approval of instructor.

MARS 681 Seminar**Credit 1. 1 Lecture Hour.**

Presentation of recent research by students, faculty and visiting faculty.

Prerequisite: None.

MARS 683 Field Practicum in Marine Sciences**Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.**

An overview of marine sciences in remote locations varying by instructor and selected topics. Lectures on recent scientific papers, methods, and concepts related to field area. Individual projects and data collection including data analysis and presentation of results in a formal seminar and paper based on the research and findings.

Prerequisite: Enrollment in graduate program.

MARS 684 Internship in Marine Resources Management**Credits 1 to 9. 1 to 9 Other Hours.**

This is a faculty supervised study with an agency or other position within or outside the Texas A&M University System. Student involvement consists of real-life learning of marine resources management issues. It is a full-immersion course that provides students with hands-on experience in marine resources management.

Prerequisites: Approval of faculty sponsor; graduate status or special approval.

MARS 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Selected Topics in an identified area of science, law policy or management of marine natural resources not covered in any other courses in the curriculum.

Prerequisite: Approval of instructor.

MARS 689 Special Topics in Marine Resources Management**Credits 1 to 6. 1 to 6 Lecture Hours.**

Selected topics in an identified area of marine resources management. May be repeated for credit.

Prerequisites: Approval of instructor; graduate status or special approval.

MARS 691 Research in Marine Sciences**Credits 1 to 12. 1 to 12 Other Hours.**

For thesis or dissertation.

MARS 693 Professional Study for Marine Resource Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Guidance for preparation of a professional paper and abstract by the advisor; intended for non-thesis (professional track) Marine Resources Management students.

Prerequisite: Approval of instructor.

MATH - Mathematics

MATH 601 Methods of Applied Mathematics I**Credits 3. 3 Lecture Hours.**

Methods of linear algebra, vector analysis and complex variables.

Prerequisite: MATH 308 or equivalent; also taught at Galveston campus.**MATH 602 Methods and Applications of Partial Differential Equations****Credits 3. 3 Lecture Hours.**

Classification of linear partial differential equations of the second order; Fourier series, orthogonal functions, applications to partial differential equations; special functions, Sturm-Liouville theory, application to boundary value problems; introduction to Green's functions; finite Fourier transforms.

Prerequisites: MATH 601 or MATH 308 and MATH 407; also taught at Galveston campus.**MATH 603 Methods of Applied Mathematics II****Credits 3. 3 Lecture Hours.**

Tensor algebra and analysis; partial differential equations and boundary value problems; Laplace and Fourier transform methods for partial differential equations.

Prerequisite: MATH 601 or MATH 311.**MATH 604 Mathematical Foundations of Continuum Mechanics****Credits 3. 3 Lecture Hours.**

Mathematical description of continuum mechanics principles, including: tensor analysis, generalized description of kinematics and motion, conservation laws for mass and momentum; invariance and symmetry principles; application to generalized formulation of constitutive expressions for various fluids and solids.

Prerequisites: MATH 410; MATH 451 or equivalent.**MATH 605 Mathematical Fluid Dynamics****Credits 3. 3 Lecture Hours.**

Derivation of basic equations of motion; Navier-Stokes equations; potential equations; some exact solutions in two and three dimensions; equations of boundary layer theory; vorticity-stream function formulation and vortex dynamics; introduction to hydrodynamic stability; introduction to equations of turbulence.

Prerequisite: MATH 601 or equivalent.**MATH 606 Theory of Probability I****Credits 3. 3 Lecture Hours.**

Measure and integration, convergence concepts, random variables, independence and conditional expectation, laws of large numbers, central limit theorems, applications.

Prerequisite: MATH 607 or approval of instructor.**MATH 607 Real Variables I****Credits 3. 3 Lecture Hours.**Lebesgue measure and integration theory, differentiation, L_p -spaces, abstract integration, signed measures; Radon-Nikodym theorem, Riesz representation theorem, integration on product spaces.**Prerequisite:** MATH 447 or equivalent.**MATH 608 Real Variables II****Credits 3. 3 Lecture Hours.**

Banach spaces, theorems of Hahn-Banach and Banach-Steinhaus, the closed graph and open mapping theorems, Hilbert spaces, topological vector spaces and weak topologies.

Prerequisite: MATH 607.**MATH 609 Numerical Analysis****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Interpolation, numerical evaluation of definite integrals and solution of ordinary differential equations; stability and convergence of methods and error estimates.

Prerequisite: Knowledge of computer programming (C or FORTRAN).**MATH 610 Numerical Methods in Partial Differential Equations****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Introduction to finite difference and finite element methods for solving partial differential equations; stability and convergence of methods and error bounds.

Prerequisite: MATH 417 or MATH 609 or equivalent; knowledge of computer programming.**MATH 611 Introduction to Ordinary and Partial Differential Equations****Credits 3. 3 Lecture Hours.**

Basic theory of ordinary differential equations; existence and uniqueness, dependence on parameters, phase portraits, vector fields. Partial differential equations of first order, method of characteristics. Basic linear partial differential equations: Laplace equation, heat (diffusion) equation, wave equation and transport equation. Solution techniques and qualitative properties.

Prerequisite: MATH 410 or equivalent or instructor's approval.**MATH 612 Partial Differential Equations****Credits 3. 3 Lecture Hours.**

Theory of linear partial differential equations; Sobolev spaces; elliptic equations (including boundary value problems and spectral theory); linear evolution equations of parabolic and hyperbolic types (including initial and boundary value problems). As time permits, additional topics might be included.

Prerequisite: MATH 611 and MATH 607 or MATH 641, or approval of instructor.**MATH 613 Graph Theory****Credits 3. 3 Lecture Hours.**

One or more broad areas of graph theory or network theory, such as planarity, connectivity, Hamiltonian graphs, colorings of graphs, automorphisms of graphs, or network theory.

Prerequisite: MATH 431 or equivalent or approval of instructor.**MATH 614 Dynamical Systems and Chaos****Credits 3. 3 Lecture Hours.**

Discrete maps; continuous flows; dynamical systems; Poincaré maps; symbolic dynamics; chaos, strange attractors; fractals; computer simulation of dynamical systems.

Prerequisites: MATH 308; MATH 601 or equivalent.**MATH 615 Introduction to Classical Analysis****Credits 3. 3 Lecture Hours.**

Set-theoretic preliminaries; Cantor-Schröder-Bernstein Theorem; review of sequences; limit inferior and limit superior; infinite products; metric spaces; convergence of functions; Dini's Theorem, Weierstrass Approximation Theorem; Monotone functions; bounded variation; Helly's Selection Theorem; Riemann-Stieltjes integration; Fourier series; Fejer's Theorem; Parseval's Identify; Bernstein's Theorem on absolutely convergent Fourier series.

Prerequisite: MATH 409 or equivalent.

MATH 617 Theory of Functions of a Complex Variable I**Credits 3. 3 Lecture Hours.**

Holomorphic functions, complex integral theorems, Runge's theorem, residue theorem, Laurent series, conformal mapping, harmonic functions.

Prerequisite: MATH 410.**MATH 618 Theory of Functions of a Complex Variable II****Credits 3. 3 Lecture Hours.**

Infinite products, Weierstrass factorization theorem, Mittag-Leffler's theorem, normal families, Riemann mapping theorem, analytic continuation, Picard's theorems and selected topics.

Prerequisite: MATH 617.**MATH 619 Applied Probability****Credits 3. 3 Lecture Hours.**

Measure Theory; Lebesgue integration; random variables; expectation; condition expectation martingales and random walks; designed for beginning graduate students in mathematics, statistics, the sciences and engineering and students in economics and finance with a strong mathematical background.

Prerequisites: MATH 409 and MATH 411.**MATH 620 Algebraic Geometry I****Credits 3. 3 Lecture Hours.**

Affine and projective varieties; sheaves; cohomology; Riemann-Roch Theorem for curves.

Prerequisite: MATH 653 or approval of instructor.**MATH 622 Differential Geometry I****Credits 3. 3 Lecture Hours.**

Surfaces in 3-D space and generalizations to submanifolds of Euclidean space; smooth manifolds and mappings; tensors; differential forms; Lie groups and algebras; Stokes' theorem; deRham cohomology; Frobenius theorem; Riemannian manifolds.

Prerequisites: MATH 304 or equivalent; approval of instructor.**MATH 623 Differential Geometry II****Credits 3. 3 Lecture Hours.**

Curvature of Riemannian manifolds; vector bundles; connections; Maurer-Cartan Form; Laplacian; geodesics; Chern-Gauss-Bonnet theorem; additional topics to be selected by the instructor.

Prerequisites: MATH 622 or approval of instructor.**MATH 625 Applied Stochastic Differential Equations****Credits 3. 3 Lecture Hours.**

Stochastic integration, Ito Calculus and applications of stochastic differential equations to finance and engineering.

Prerequisite: MATH 619.**MATH 626 Analytic Number Theory****Credits 3. 3 Lecture Hours.**

Analytic properties of the Riemann zeta function and Dirichlet L-functions; Dirichlet characters; prime number theorem; distribution of primes in arithmetic progressions; Siegel's theorem; the large sieve inequalities; Bombieri-Vinogradov theorem.

Prerequisite: MATH 617.**MATH 627 Algebraic Number Theory****Credits 3. 3 Lecture Hours.**

Algebraic number fields and rings of algebraic integers; arithmetic in algebraic number fields; ideals; unique factorization of ideals; ideal classes and the class group; finiteness of the class number; Minkowski's theorem; Dirichlet's unit theorem; quadratic and cyclotomic number fields; splitting of primes in extension fields.

Prerequisite: MATH 653 or approval of instructor.**MATH 628 Mathematics of Finance****Credits 3. 3 Lecture Hours.**

Pricing of financial derivatives in different market models; discrete models: Arrow-Debreu, Binomial model, Hedging; Stochastic calculus; Brownian Motion, stochastic integrals, Ito formula; continuous model: Black-Scholes formula for pricing European and American options; equivalent Martingale Measures, pricing of exotic options.

Prerequisite: MATH 606 or MATH 619 or approval of instructor.**MATH 629 History of Mathematics****Credits 3. 3 Lecture Hours.**

Major events in the evolution of mathematical thought from ancient times to the present, the development of various important branches of mathematics, including numeration, geometry, algebra, analysis, number theory, probability, and applied mathematics.

Prerequisite: MATH 304 or equivalent.**MATH 630 Combinatorics****Credits 3. 3 Lecture Hours.**

This is an introduction at the graduate level to the fundamental ideas and results of combinatorics, including enumerative techniques, sieve methods, partially ordered sets and generating functions.

Prerequisite: undergraduate discrete math course or permission of instructor.**MATH 636 Topology I****Credits 3. 3 Lecture Hours.**

Set theory, topological spaces, generalized convergence, compactness, metrization, connectedness, uniform spaces, function spaces.

Prerequisite: Approval of instructor.**MATH 637 Topology II****Credits 3. 3 Lecture Hours.**

Continuation of MATH 636.

Prerequisite: MATH 636 or approval of instructor.**MATH 638 Hyperbolic Conservation Laws****Credits 3. 3 Lecture Hours.**

Introduction to basic theory and numerical methods for first order nonlinear partial differential equations; basic existence-uniqueness theory for scalar conservation laws; special equations and systems of interest in various applications and Riemann problem solutions for such systems; design of numerical methods for general hyperbolic systems; stability and convergence properties of numerical methods.

Prerequisite: MATH 610 or MATH 612 or approval of instructor.**MATH 639 Iterative Techniques****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Numerical methods for solving linear and nonlinear equations and systems of equations; eigenvalue problems.

Prerequisites: Elementary linear algebra and knowledge of computer programming (C or FORTRAN).**MATH 640 Linear Algebra for Applications****Credits 3. 3 Lecture Hours.**

Review of linear algebra; spectral theory in inner product spaces; decomposition theorems; duality theory and multilinear algebra; tensor products; applications. May be taken concurrently with MATH 641.

Prerequisite: MATH 304 or equivalent.

MATH 641 Analysis for Applications I**Credits 3. 3 Lecture Hours.**

Review of preliminary concepts; sequence and function spaces; normed linear spaces, inner product spaces; spectral theory for compact operators; fixed point theorems; applications to integral equations and the calculus of variations.

Prerequisites: MATH 447 and MATH 640 or approval of instructor.

MATH 642 Analysis for Applications II**Credits 3. 3 Lecture Hours.**

Distributions and differential operators; transform theory; spectral theory for unbounded self-adjoint operators; applications to partial differential equations; asymptotics and perturbation theory.

Prerequisite: MATH 641.

MATH 643 Algebraic Topology I**Credits 3. 3 Lecture Hours.**

Fundamental ideas of algebraic topology, homotopy and fundamental group, covering spaces, polyhedra.

Prerequisite: Approval of instructor.

MATH 644 Algebraic Topology II**Credits 3. 3 Lecture Hours.**

Homology and cohomology theory.

Prerequisite: MATH 643.

MATH 645 A Survey of Mathematical Problems I**Credits 3. 3 Lecture Hours.**

A survey of problems in various branches of mathematics, such as logic, probability, graph theory, number theory, algebra and geometry.

Prerequisites: MATH 409, MATH 415, MATH 423 or approval of instructor.

MATH 646 A Survey of Mathematical Problems II**Credits 3. 3 Lecture Hours.**

A survey of problems in various branches of mathematics such as algebra, geometry, differential equations, real analysis, complex analysis, calculus of variations.

Prerequisite: MATH 645 or approval of instructor.

MATH 647 Mathematical Modeling**Credits 3. 3 Lecture Hours.**

The process and techniques of mathematical modeling; covers a variety of application areas and models such as ordinary and partial differential equations, stochastic models, discrete models and problems involving optimization.

Prerequisite: MATH 442 or approval of instructor.

MATH 648 Computational Algebraic Geometry**Credits 3. 3 Lecture Hours.**

Broad introduction to algorithmic algebraic geometry, including numerical and complexity theoretic aspects; theory behind the most efficient modern algorithms for polynomial system solving and the best current quantitative/geometric estimates on algebraic sets over various rings is derived.

Prerequisite: MATH 653 or approval of instructor.

MATH 650 Several Complex Variables**Credits 3. 3 Lecture Hours.**

Introduction to function theory in several complex variables with an emphasis on the analytic and partial differential equations aspects of the subject.

Prerequisites: MATH 608 and MATH 618 or equivalents.

MATH 651 Optimization I**Credits 3. 3 Lecture Hours.**

Fundamentals of mathematical analysis underlying theory of constrained optimizations for a finite number of variables, necessary and sufficient conditions for constrained extrema of equality constraint problems, sufficient conditions for fulfillment of constraint qualification, computational methods for concave programming problems and applications.

Prerequisite: MATH 410 or approval of instructor.

MATH 652 Optimization II**Credits 3. 3 Lecture Hours.**

Necessary conditions of calculus of variations, elementary theory of games, formulation of basic control problem, Hestenes' necessary conditions for optimal control, transformations, methods of computation and applications.

Prerequisite: MATH 651.

MATH 653 Algebra I**Credits 3. 3 Lecture Hours.**

Survey of groups, rings, ideals.

Prerequisite: MATH 415 or approval of instructor.

MATH 654 Algebra II**Credits 3. 3 Lecture Hours.**

Survey of modules, field extensions, Galois theory.

Prerequisite: MATH 653 or approval of instructor.

MATH 655 Functional Analysis I**Credits 3. 3 Lecture Hours.**

Normed linear spaces, duality theory, reflexivity, operator theory. Banach algebras, spectral theory, representation theory.

Prerequisite: MATH 608.

MATH 656 Functional Analysis II**Credits 3. 3 Lecture Hours.**

Topological linear spaces, locally convex spaces, duality in locally convex spaces, ordered topological vector spaces, distribution theory, applications to analysis.

Prerequisite: MATH 655.

MATH 658 Applied Harmonic Analysis**Credits 3. 3 Lecture Hours.**

Fourier series and Fourier Transform; discrete (fast) Fourier transform; discrete cosine transform; local cosine transform; Radon transform; filters; harmonic analysis on the sphere; radial, periodic and spherical basis functions; applications.

Prerequisites: MATH 304; MATH 308 or equivalent.

MATH 660/CSCE 660 Computational Linear Algebra**Credits 3. 3 Lecture Hours.**

Techniques in matrix computation including elimination methods, matrix decomposition, generalized inverses, orthogonalization and least-squares, eigenvalue problems and singular value decomposition, iterative methods and error analysis.

Prerequisite: MATH 417 or equivalent or CSCE 442 or equivalent.

Cross Listing: CSCE 660/MATH 660.

MATH 661 Mathematical Theory of Finite Element Methods**Credits 3. 3 Lecture Hours.**

Will develop basic mathematical theory of finite element method; construction of finite element spaces and piece-wise polynomial approximation; Ritz-Galerkin methods and variational crimes; energy and maximum norm estimates; mixed finite element method; applications to diffusion-reaction problems.

MATH 662 Seminar in Algebra**Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in algebra. May be repeated for credit.

Prerequisite: Approval of instructor.**MATH 663 Seminar in Analysis****Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in analysis. May be repeated for credit.

Prerequisite: Approval of instructor.**MATH 664 Seminar in Applied Mathematics****Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in applied mathematics. May be repeated for credit.

Prerequisite: Approval of instructor.**MATH 666 Seminar in Geometry****Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in geometry. May be repeated for credit.

Prerequisite: Approval of instructor.**MATH 667 Foundations and Methods of Approximation****Credits 3. 3 Lecture Hours.**

Existence, uniqueness and characterization of best approximations; polynomial and rational approximants; Bernstein polynomials; Bernstein and Markov inequalities; ridge functions; approximation from shift-invariant subspaces; orthogonal polynomials; neural networks, radial basis functions, scattered-data surface fitting; subdivision analysis.

Prerequisites: MATH 407 and MATH 409.**MATH 669 Seminar in Mathematical Biology****Credits 3. 3 Lecture Hours.**

Problems, methods and recent developments in Mathematical Biology. May be repeated for credit.

Prerequisite: Approval of instructor.**MATH 670 Applied Mathematics I****Credits 3. 3 Lecture Hours.**

Mathematical tools of applied mathematics; Fredholm alternative; integral operators; Green's functions; unbounded operators; Stone's theorem; distributions; convolutions; Fourier transforms; applications.

Prerequisite: MATH 642 or equivalent.**MATH 672 Hydrodynamic Stability****Credits 3. 3 Lecture Hours.**

Instability mechanisms; instability of interfacial and free surface flows; thermal instability, centrifugal instability, instability of inviscid and viscous parallel shear flows; fundamental concepts and applications of nonlinear instability; the onset of turbulence; various transitions to turbulence.

Prerequisites: MATH 601 or equivalent; MATH 605 or equivalent.**MATH 673 Information, Secrecy and Authentication I****Credits 3. 3 Lecture Hours.**

Preliminaries; probability, information, entropy, signals, channels: group-theoretic view of messages: contemporary secrecy and digital signature systems; one-time pads, DES, RSA, DSS, wheels, LFSR-based systems; analog scramblers; key exchange, key management, secret sharing, access structures; measures of security.

Prerequisites: Graduate classification and approval of instructor.**MATH 676 Finite Element Methods in Scientific Computing****Credits 3. 3 Lecture Hours.**

Basic finite element methods; structure of finite element codes; assembling linear systems of equations and algorithmic aspects; linear iterative solvers; adaptive mesh refinement; vector-valued and mixed problems; nonlinear problems; visualization; parallelization aspects. Additional topics may be chosen by instructor.

Prerequisites: MATH 610; ENGR finite element class on MATH 419 or MATH 609; approval of instructor. Knowledge of C++.**MATH 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

Directed internship in an organization to provide students with professional experience in organization settings appropriate to the student's career objectives.

Prerequisite: Approval of department head.**MATH 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Offered to enable students to undertake and complete, with credit, limited investigations not within their thesis research and not covered by any other courses in the curriculum.

Prerequisite: Approval of instructor.**MATH 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of mathematics. May be repeated for credit.

Prerequisite: Approval of instructor.**MATH 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

MATH 695 Frontiers in Mathematical Research**Credits 3. 3 Lecture Hours.**

This course is designed to acquaint the graduate student with the present status of investigative work in a variety of mathematical fields. Content will depend on the availability of visiting lecturers who will be selected because of distinguished international recognition in their fields of research. May be taken two times for credit.

Prerequisite: Graduate classification.**MATH 696 Mathematical Communication and Technology****Credits 3. 3 Lecture Hours.**

Techniques of oral, written and electronic communication of mathematics; effective classroom and seminar presentation; LATEX, HTML and Javascript; developing Internet applications; Maple and Matlab; classroom use of computer graphics.

Prerequisite: Approval of instructor.

MCMD - Molecular Cell Medicine

MCMD 625/BICH 625 Nucleic Acid-Protein Interactions**Credit 1. 1 Lecture Hour.**

Mechanisms of nucleic acid-protein interactions involved in fundamental biochemical processes such as DNA replication and rearrangement, transposition, transcription, RNA splicing and translation; original research articles presented focusing on experimental approaches, interpretation of results and overall significance.

Prerequisite: Approval of the department head.**Cross Listing:** BICH 625/MCMD 625.

MCMD 671/BICH 671 Macromolecular Folding and Design**Credit 1. 1 Lecture Hour.**

The Macromolecular Folding and Design Journal Club is to serve as a mechanism for oral dissemination of current knowledge regarding the structure and function of biological macromolecules.

Prerequisite: Approval of the department head.

Cross Listing: BICH 671/MCMD 671.

MCMD 672/BICH 672 Biological Membranes**Credit 1. 1 Lecture Hour.**

Seminar-based course examining recent discoveries in the structure, function and assembly of biological membranes; students give an oral presentation on current literature in molecular biology, biochemistry and/or biophysics.

Prerequisite: Approval of the department head.

Cross Listing: BICH 672/MCMD 672.

MCMD 674/BICH 674 Protein Folding and Stability**Credit 1. 1 Lecture Hour.**

Selected topics from recent literature in the general areas of protein folding, structure and stability.

Prerequisite: Approval of the department head.

Cross Listing: BICH 674/MCMD 674.

MCMD 675 Molecular Pathogenesis**Credit 1. 1 Lecture Hour.**

Oral presentations and discussions from current literature in the general area of the molecular mechanisms involved in disease. May be taken 12 times.

Prerequisite: Approval of the department head.

MCMD 676 Frontiers in Regenerative Medicine**Credit 1. 1 Lecture Hour.**

This course will follow a "journal club" format in which a student will serve as the discussion leader for the weekly journal meeting at the Institute for Regenerative Medicine. Papers will be elected from the recent literature in the areas of regenerative medicine/stem cell research. The primary purpose of the course is oral dissemination of recent knowledge of regenerative medicine. Secondly, it will serve as a training mechanism for students who wish to improve their presentation skills with a wide spectrum of scientists at various levels of expertise.

Prerequisite: MSCI 601.

MCMD 677/GENE 677 Genes and Diseases**Credits 3. 3 Lecture Hours.**

Molecular and genetic basis for human disease; structure, function and evolution of chromosomes; epigenetics; gene mapping; complex genetic traits; cancer genetics; neurodegenerative disorders, animal models (yeast, mouse, worms, fruitflies); ethics.

Cross Listing: GENE 677/MCMD 677.

MCMD 681 Seminar**Credit 1. 1 Lecture Hour.**

Focus will be on critical scientific thinking. Emphasis placed on oral communications, scientific writing and grant preparation.

Prerequisite: Graduate student in medical science. Approval of department head.

MCMD 685 Directed Studies**Credits 1 to 6. 1 to 6 Lecture Hours.**

Limited investigation in fields other than those chosen for thesis or dissertation.

Prerequisite: Approval of instructor.

MCMD 689 Special Topics**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of biochemistry and genetics. May be repeated for credit when topics vary.

MCMD 914 Medical Biochemistry, Genetics and Nutrition**Credits 10. 10 Lecture Hours.**

Properties and metabolism of proteins, nutritional biochemistry, nutritional deficiencies, diet and disease. The metabolic basis of inherited disease. Metabolism of lipids, carbohydrates, amino acids, purines and pyrimidines. Properties and metabolism of DNA and RNA. Fundamentals of medical genetics, including diseases resulting from inborn errors of metabolism, chromosomal abnormalities, human gene mapping and applications of recombinant DNA technology to problems of human genetics.

Prerequisite: Admission to the medical curriculum.

MEEN - Mechanical Engineering

MEEN 601 Advanced Product Design**Credits 3. 3 Lecture Hours.**

Design methodology, functional design, innovation, parameter analysis, design for reliability, manufacturability and strength; design project.

Prerequisite: MEEN 402 or equivalent.

MEEN 602 Modeling and Analysis of Mechanical Systems**Credits 3. 3 Lecture Hours.**

State spaces and vector algebra with applications to static, dynamic and controls systems, state evolution, trajectories, ordinary differential equations; global and local balance laws and vector calculus to describe flowing/deforming systems; steady state and transient PDEs, statics and vibrations of strings and membranes, and the heat equation; numerical methods.

Prerequisite: Graduate classification.

MEEN 603 Theory of Elasticity**Credits 3. 3 Lecture Hours.**

Analysis of stress and strain in two and three dimensions, equilibrium and compatibility equations, strain energy methods; torsion of noncircular sections; flexure; axially symmetric problems.

Prerequisite: Mechanics of Materials, Advanced Calc Different Equations.

Cross Listing: AERO 605 and MEMA 601.

MEEN 604 Time Frequency Nonlinear Vibration Control**Credits 3. 3 Lecture Hours.**

Deployment of simultaneous vibration and frequency control in real-time to efficiently negate nonlinear dynamic instability; nonlinear vibrations in the joint time-frequency domain; theories on incorporating nonlinear dynamics and nonlinear time-frequency control into the control of bifurcation and route-to-chaos; integration on basic and advance topics from several engineering disciplines into the creation of an innovative, new control theory effective in denying bifurcation and chaotic state from emerging.

Prerequisite: Graduate classification.

MEEN 605 Gas Dynamics**Credits 3. 3 Lecture Hours.**

Overview of gas flows at Mach numbers wherein the fluid can no longer be assumed incompressible; aerospace and mechanical engineering applications ranging from external aerodynamics to internal flows for applications such as propulsion and airframe designs for jets, rockets, missiles and other devices; includes supersonic flows, shock waves, expansion waves, shock tubes, supersonic wind tunnels, gas flows with friction and gas flows with heat transfer.

Prerequisite: MEEN 344 or equivalent.

MEEN 607/MSEN 607 Polymer Physical Properties**Credits 3. 3 Lecture Hours.**

Macromolecular concepts; molecular weight characterization; solubility parameters; phase diagrams; viscoelasticity; rheology; thermal behavior; damage phenomena, morphology; crystallization; liquid crystallinity; nanocomposites.

Prerequisite: MEEN 222/MSEN 222 or equivalent.**Cross Listing:** MSEN 607/MEEN 607.**MEEN 608/MEMA 602 Continuum Mechanics****Credits 3. 3 Lecture Hours.**

Development of field equations for analysis of continua (solids as well as fluids); conservation laws: kinematics, constitutive behavior of solids and fluids; applications to aerospace engineering problems involving solids and fluids.

Prerequisite: Graduate classification.**Cross Listing:** MEMA 602/AERO 603.**MEEN 609 Materials Science****Credits 3. 3 Lecture Hours.**

Structure and properties of solid materials.

Prerequisites: Undergraduate level Materials, Science and Engineering course.**MEEN 610 Applied Polymer Science****Credits 3. 3 Lecture Hours.**

Macromolecular concepts, molecular weight, tacticity, theory of solutions, rubber elasticity, thermal transitions, rheology, crystallinity, heterogeneous systems and relation of mechanical and physical characteristics to chemical structure; applications to polymer blends, thermosetting resins, structural adhesives and composites; design and processing of fibrous composites.

Prerequisite: Graduate classification; ENGR 213.**MEEN 611 Advanced Internal Combustion Engines****Credits 3. 3 Lecture Hours.**

Advanced thermodynamics of cycles for internal combustion engines, including fuels and combustion; performance characteristics of various types of engines.

Prerequisite: MEEN 344 or equivalent, or graduate classification.**MEEN 612 Mechanics of Robot Manipulators****Credits 3. 3 Lecture Hours.**

Forward and inverse kinematics and differential kinematics of robot manipulators, path planning, motion planning, dynamics of robot manipulators, control algorithms; PD/PID control, computed torque algorithm, robust and adaptive control algorithms, feedback linearization.

Prerequisites: MEEN 364 and MEEN 411 or approval of instructor.**MEEN 613 Engineering Dynamics****Credits 3. 3 Lecture Hours.**

Three dimensional study of dynamics of particles and rigid bodies and application to engineering problems; introduction to Lagrange equations of motion and Hamilton's principle.

Prerequisites: MEEN 363; MATH 308.**MEEN 614 Design and Modeling of Viscoelastic Structures****Credits 3. 3 Lecture Hours.**

To provide the mechanical and mathematical basis for modeling linear viscoelastic materials.

Prerequisite: CVEN 305 or equivalent.**MEEN 615 Advanced Engineering Thermodynamics****Credits 3. 3 Lecture Hours.**

Theories of thermodynamics and their application to more involved problems in engineering practice and design; equilibrium, Gibbs' function, nonideal gases and various equations of state; second law analysis and statistical theory.

Prerequisite: MEEN 421 or equivalent.**MEEN 616/MSEN 616 Surface Science****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Properties of surfaces, principles of classic and contemporary surface characterization techniques, recent development and roles of surface science in advanced technology.

Prerequisite: Graduate classification.**Cross Listing:** MSEN 616/MEEN 616.**MEEN 617 Mechanical Vibrations****Credits 3. 3 Lecture Hours.**

Theory of linear vibrations of finite and infinite number of degree of freedom systems via Lagrange, Newtonian and Energy approaches. Engineering applications.

Prerequisites: MEEN 364; MATH 308.**MEEN 618 Energy Principles and Variational Methods in Applied Mechanics****Credits 3. 3 Lecture Hours.**

Principles of virtual work, minimum total potential energy and extremum mixed variational principles; energy theorems of structural mechanics; Hamilton's principle for dynamical systems; Rayleigh-Ritz Galerkin and weighted-residual methods; applications to linear and nonlinear problems in mechanics (bars, beams, frames, plates and general boundary value problems).

Prerequisites: MATH 601 or concurrent enrollment.**MEEN 619 Conduction and Radiation****Credits 3. 3 Lecture Hours.**

Solutions of steady and transient problems with method of separation of variables, finite difference numerical methods, Duhamel's Theorem, Green's function, and Laplace transform, the phase change problems. View factors; radiative properties of surfaces and participating media, radiative exchange; gas radiation; and advanced solution methods for thermal radiation.

Prerequisite: MEEN 461.**MEEN 621 Fluid Mechanics****Credits 3. 3 Lecture Hours.**

Dynamics of two-dimensional incompressible and compressible fluids; viscous flow in laminar and turbulent layers, the Navier-Stokes equations and boundary layer theory.

Prerequisite: MEEN 344 or equivalent.**MEEN 622 Advanced Fluid Mechanics****Credits 3. 3 Lecture Hours.**

Laminar viscous flows; hydrodynamic stability; transition to turbulence; special topics include atomization, two-phase flows and non-linear theories.

Prerequisites: MEEN 621 or equivalent; MATH 601 or equivalent.

MEEN 623 Tensor Analysis for Engineers**Credits 3. 3 Lecture Hours.**

Tensors in three-dimensional Euclidean space specialized for engineering applications including index notation, tensor operations, contraction of tensors, Kronecker delta, permutation tensor, Jacobian transformation, Reynolds Transport Theorem, eigenvalue and eigenvector of a second order tensors, co- and contravariant base vectors, metric coefficients, derivatives of the base vectors, Christoffel symbols, transformation of Navier-Stokes equation, Riemann space, Riemann metric, Riemann arid Christoffel surface tensor, Ricci theorem, Lorenz transformation, curvature tensor and Einstein tensor.

Prerequisites: Graduate classification.**MEEN 624 Two-Phase Flow and Heat Transfer****Credits 3. 3 Lecture Hours.**

Current status of two-phase flow and heat transfer for application to design; basic one dimensional treatment of two-phase flows and the current state of the art in liquid-vapor phase change heat transfer.

Prerequisite: Undergraduate courses in fluid mechanics and heat transfer.**MEEN 625/MSEN 625 Mechanical Behavior of Materials****Credits 3. 3 Lecture Hours.**

Examination of deformation and microstructure mechanisms responsible for deformation and failure in metals; fatigue, creep, and fracture mechanisms of materials; emphasis on microstructural-mechanical property relationship.

Prerequisite: Undergraduate-level materials science course.**Cross Listing:** MSEN 625/MEEN 625.**MEEN 626 Lubrication Theory****Credits 3. 3 Lecture Hours.**

Development of Reynolds equation from Navier-Stokes equation for study of hydrodynamic lubrication theory as basis for bearing design; application to simple thrust and journal bearings and pads of various geometries; hydrostatic lubrication, floating ring bearing, compressible fluid (gas) lubrication, grease lubrication, dynamically loaded bearings, half speed whirl and stability.

Prerequisites: MEEN 344 or equivalent; MATH 308.**MEEN 627 Heat Transfer-Conduction****Credits 3. 3 Lecture Hours.**

Mathematical theory of steady-state and transient heat conduction; solution of the governing differential equations by analytical and numerical methods; applications to various geometric configurations.

Prerequisites: MEEN 461; MATH 601 or registration therein.**MEEN 628 Heat Transfer-Convection****Credits 3. 3 Lecture Hours.**

Mathematical theory of convection energy transport; applications to the design of heat-transfer apparatus.

Prerequisites: MEEN 461; MATH 601 or registration therein.**MEEN 629 Heat Transfer-Radiation****Credits 3. 3 Lecture Hours.**

Mathematical theory of thermal radiation with design applications; ideal and nonideal radiating surfaces, heat transfer in enclosures, solar radiation; analytical, numerical and analogical methods stressed in problem solving.

Prerequisites: MEEN 461; MATH 601 or registration therein.**MEEN 630 Intermediate Heat Transfer****Credits 3. 3 Lecture Hours.**

Application of basic laws to the analysis of heat and mass transfer; exact and approximate solutions to conduction, convection and radiation problems; current status of single and two-phase heat transfer for application to design.

Prerequisites: Undergraduate courses in fluid mechanics and heat transfer.**MEEN 631 Microscale Thermodynamics****Credits 3. 3 Lecture Hours.**

An understanding of thermodynamics and transport properties from a microscopic viewpoint; principles of quantum mechanics; atomic and molecular contribution to thermodynamic properties; kinetic theory and transport properties.

Prerequisite: Graduate classification.**MEEN 632 Advanced Computer-Aided Engineering****Credits 3. 3 Lecture Hours.**

An integrated learning environment that is responsive to industrial need for mechanical engineers with multi-disciplinary design skills; three essentials emphasized in strong teamwork environment; design concept development, design optimization and effective communication via engineering drawings.

Prerequisite: Graduate classification in mechanical engineering.**MEEN 633 Combustion Science and Engineering****Credits 3. 3 Lecture Hours.**

Fuels and combustion, mass transfer, transport properties, conservation laws, droplet, particle and slurry combustion, sprays, combustion in flow systems flammability, ignition, extinction, flame stability, laminar and detonation waves, premixed flames, application to burners-residential, utility and transportation, fluidized bed combustors, and fire and flame spread of modern building materials.

Prerequisites: MEEN 421, MEEN 344, MEEN 461 or equivalents.**MEEN 634 Dynamics and Modeling of Mechatronic Systems****Credits 3. 3 Lecture Hours.**

Mechatronic interactions in lumped-parameter and continuum systems. Review of integral and differential electromagnetic laws, including motions. Lumped elements and dynamic equations of motion. Linear and non-linear actuators and transducers. Field transformation and moving media. Electromagnetic force densities and stress tensors.

Prerequisites: MEEN 364, MATH 308, MEEN 357.**MEEN 635/MSEN 635 Flow and Fracture of Polymeric Solids****Credits 3. 3 Lecture Hours.**

Relationship of molecular structure to flow and fracture in polymeric materials; introduction of viscoelastic fracture mechanics; micromechanisms of fracture including crazing; fatigue behavior of polymeric materials.

Cross Listing: MSEN 635/MEEN 635.**MEEN 636 Turbulence: Theory and Engineering Applications****Credits 3. 3 Lecture Hours.**

Characteristics, concepts, and relationships of detailed turbulent flow analysis and measurement; turbulence origin, energy production, cascade and dissipation; correlation functions, spectra and length scales; closure modeling of the Reynolds-averaged governing equations.

Prerequisites: MEEN 621.

MEEN 637 Turbulence Measurement and Analysis**Credits 3. 3 Lecture Hours.**

Instrumentation and measurement techniques used in turbulent flow field analysis with emphasis on understanding the characteristics of the turbulence. Pressure probes, hot-wire/hot-film anemometry, laser anemometry, spectral and temporal analysis techniques, conditional sampling and computer applications.

Prerequisite: MEEN 344.**MEEN 638 Mechanics of Non-Linear Fluids****Credits 3. 3 Lecture Hours.**

Introduction to classifications of flows, constitutive theory, fluids of the differential type.

Prerequisites: Graduate classification and approval of instructor.**MEEN 639 Dynamics of Rotating Machinery****Credits 3. 3 Lecture Hours.**

Dynamic stability, critical speeds and unbalanced response of rotor-bearing systems; special problems encountered in modern applications operating through and above critical speeds.

Prerequisites: MEEN 363 or equivalent and graduate classification or approval of the instructor.**MEEN 641 Quantitative Feedback Theory****Credits 3. 3 Lecture Hours.**

Benefits of feedback and cost of feedback; understanding extent to which available design theories meet realistic design constraints; treating the synthesis problem from a quantitative viewpoint; quantitative feedback theory as an effective tool for realistic feedback design problems for multivariable systems having both minimum and non-minimum phase zeros.

Prerequisite: MEEN 651 or equivalent.**MEEN 642 Gas Turbine Heat Transfer and Cooling Technology****Credits 3. 3 Lecture Hours.**

Focus on the range of gas turbine heat transfer issues and associated cooling technologies; fundamentals, turbine heat transfer, turbine film cooling, turbine internal cooling with rotation, experimental methods, numerical modeling and final remarks; provide solid background for research and design in turbomachinery heat transfer.

Prerequisites: MEEN 344, MEEN 461, and graduate standing.**MEEN 643 Experimental Methods in Heat Transfer and Fluid Mechanics****Credits 3. 3 Lecture Hours.**

Experimental methods including experiment planning and design, mechanics of measurements, error and uncertainty analysis, standards and calibration, temperature measurement, interferometry, flow rate measurement, hot wire anemometry, subsonic and supersonic flow visualization and data analysis; selected experiments conducted.

Prerequisite: Graduate classification.**MEEN 644/NUEN 644 Numerical Heat Transfer and Fluid Flow****Credits 3. 3 Lecture Hours.**

Convection-diffusion, up-wind, exponential, exact solution, power law schemes, false diffusion; staggered grid concept; development of simple and simpler algorithms; periodically developed flows.

Prerequisites: MEEN 357 and MEEN 461; NUEN 430 or equivalent.**Cross Listing:** NUEN 644/MEEN 644.**MEEN 645 Mechanics of Compliant Materials****Credits 3. 3 Lecture Hours.**

Introduction to mechanics; three-dimensional analysis tools and techniques needed to model the linear behavior of fluids and solids in their response to imposed loads and deformations.

Prerequisites: Grade of C or better in CVEN 305, MEEN 368, or equivalent.**MEEN 646 Aerothermodynamics of Turbomachines****Credits 3. 3 Lecture Hours.**

Fluid mechanics and thermodynamics as applied to the design of rotating systems; development of turbomachinery equations; detailed aerodynamic design of compressors and turbines.

Prerequisites: MEEN 414 and MEEN 472; MATH 601 or approval of instructor.**MEEN 647 Fundamentals of Energy Storage****Credits 3. 3 Lecture Hours.**

Fundamental concepts of energy storage; fundamentals of mechano-physicochemical mechanisms and interactions that underlie electrodes in an energy storage system (e.g. battery, supercapacitor); thermodynamics, kinetics and transport phenomena of species and charge, thermal and mechanical behavior; performance, degradation and safety of such systems based on the aforementioned fundamental mechanisms.

Prerequisite: Graduate classification.**MEEN 649 Nonlinear Dynamical Systems****Credits 3. 3 Lecture Hours.**

Exact and approximate solutions to nonlinear differential equations; multiple time scales, Lindstedt Poincare, KB, Harmonic balance and other approximate solution techniques; limit cycles, Lyapunov stability theorems, stability of parametrically excited systems, coexisting harmonic solutions, bifurcation theory, shooting approaches for harmonic solutions, chaos, Lyapunov exponents, paths to chaos, synchronization, fractals, practical applications.

Prerequisites: Course in differential equations; graduate classification or approval of instructor.**MEEN 651 Control System Design****Credits 3. 3 Lecture Hours.**

Frequency domain design of SISO systems for performance and sensitivity reduction; applications of Kalman filter and LQG/LTR techniques; design of sample-data systems; active control of vibration in distributed parameter systems; describing function and relay controls; application of control principles to engineering design.

Prerequisite: MEEN 411.**MEEN 652 Multivariable Control System Design****Credits 3. 3 Lecture Hours.**

Advanced issues relevant to the design of multivariable control systems using hybrid (time and frequency domain) design methodologies; design using the LQG/LTR method and advanced practical applications using various robust control system design techniques.

Prerequisite: MEEN 651 or ECEN 605.**MEEN 653 Scientific Writing****Credits 3. 3 Lecture Hours.**

Topics include origin and development of scientific writing, research methods, outlines, paper organization, journal selection, strategies to build a productive personal writing culture, effective communication, critical reviews and submission; preparation of an original manuscript for submission to a peer-reviewed journal by the end of the semester.

Prerequisites: Graduate classification and approval of instructor.**MEEN 654 Tribology-Mechanical Interface Design****Credits 3. 3 Lecture Hours.**

History and significance of tribology, rough surfaces, hertzian contact, rough surfaces in contact, friction of surfaces in contact, surface failures/wear, boundary lubrication, fluid properties, thick film lubrication, thin film lubrication, micro and nano tribology.

Prerequisite: Graduate classification.

MEEN 655 Design of Nonlinear Control Systems**Credits 3. 3 Lecture Hours.**

Design controllers for nonlinear and uncertain systems; apply the designs to mechanical systems.

Prerequisites: Graduate classification, MEEN 651 or equivalent.

MEEN 657 Viscoelasticity of Solids and Structures I**Credits 3. 3 Lecture Hours.**

Linear, viscoelastic mechanical property characterization methods, time-temperature equivalence, multiaxial stress-strain equations; viscoelastic stress analysis; the correspondence principle, approximate methods of analysis and Laplace transform inversion, special methods; static and dynamic engineering applications; nonlinear behavior.

Prerequisite: Mechanics of Materials (CVEN 305 or equiv).

MEEN 659 Sound and Vibration Measurements**Credits 3. 3 Lecture Hours.**

Basic acoustics; review of vibration theory, wave propagation in vibration systems, sound radiation from vibrating systems, sound and vibration sensors and instrumentation, data acquisition systems, measurement techniques, spectral analysis and spatial FFT analysis; design of experiments with vibro-acoustic systems and applications.

Prerequisites: Graduate classification; MATH 308 and MEEN 363.

MEEN 660 Corrosion Engineering**Credits 3. 3 Lecture Hours.**

Aqueous corrosion phenomena of the mixed potential theory; basics of electrochemical reactions; corrosion measurement; surface engineering and protection; case studies.

Prerequisite: MEEN 360, MEEN 475 or Graduate classification.

MEEN 662 Energy Management in Industry**Credits 3. 3 Lecture Hours.**

Energy systems and components frequently encountered in industrial environments; application of basic principles of thermodynamics, heat transfer, fluid mechanics and electrical machinery to the analysis and design of industrial system components and systems. Improved energy utilization.

Prerequisites: MEEN 421 and MEEN 461 or approval of instructor.

MEEN 663 Cogeneration Systems**Credits 3. 3 Lecture Hours.**

Design and analysis of cogeneration systems; selection of prime mover-steam turbine, gas turbine, or reciprocating engine; environmental assessments; economic and financial evaluations; legal and institutional considerations; case studies.

Prerequisite: MEEN 421 or equivalent.

MEEN 664 Energy Management in Commercial Buildings**Credits 3. 3 Lecture Hours.**

Basic heating, ventilating and air conditioning system design/selection criteria for air conditioning and heat system and design/selection of central plant components and equipment.

Prerequisites: MEEN 421 and MEEN 461 or approval of instructor.

MEEN 665 Application of Energy Management**Credits 3. 3 Lecture Hours.**

Continuation of MEEN 662 and 664; case studies by students of energy conservation opportunities using energy audits and building load computer simulation.

Prerequisites: MEEN 662 and MEEN 664 or approval of instructor.

MEEN 667 Mechatronics**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Mechatronics; logic circuits in mechanical systems; electrical-mechanical interfacing; analysis and applications of computerized machinery.

Prerequisite: Graduate classification in engineering.

MEEN 668 Rotordynamics**Credits 3. 3 Lecture Hours.**

Teaches the phenomena which occur in rotordynamics of turbomachinery, modeling techniques for turbomachines, and analysis techniques for rotordynamics analysis of real machines.

Prerequisite: Graduate classification.

MEEN 669 Alternative Energy Conversion**Credits 3. 3 Lecture Hours.**

Design and analysis of alternative energy conversion processes and systems based on converting energy directly (e.g. fuel cells, photovoltaics); utilizing non-combustible heat sources (e.g. geothermal, ocean gradients, solar, and nuclear fission and fusion); obtaining energy from the environment (e.g. wind, hydroelectric, ocean tides and waves).

Prerequisite: Graduate classification.

MEEN 670 Compressible Flow**Credits 3. 3 Lecture Hours.**

Compressible flow (also known as gas dynamic and/or high speed aerodynamics); gas flows at high enough Mach number wherein the fluid can no longer be assumed incompressible; aerospace and mechanical engineering applications ranging from external aerodynamics to internal flows for applications such as propulsion and airframe designs for jets, rockets, missiles, and many other devices; supersonic flows; shock waves; expansion waves; shock tubes; supersonic wind tunnels; gas flows with friction; gas flows with heat transfer.

Prerequisite: MEEN 344.

MEEN 672 Introduction to Finite Element Method**Credits 3. 3 Lecture Hours.**

Weak or variational formulation of differential equations governing one- and two- dimensional problems of engineering; finite element model development and analysis of standard problems of solid mechanics (bars, beams, and plane elasticity), heat transfer and fluid mechanics; time-dependent problems; computer implementation and use of simple finite element codes in solving engineering problems.

Prerequisite: Senior or graduate classification.

MEEN 673/MEMA 648 Nonlinear Finite Element Methods in Structural Mechanics**Credits 3. 3 Lecture Hours.**

Tensor definitions of stress and strain, finite strain, geometric and material nonlinearities; development on nonlinear finite element equations from virtual work; total and updated Lagrangian formulations; solution methods for nonlinear equations; computational considerations; applications using existing computer programs.

Prerequisites: MEMA 647/MEEN 670.

Cross Listing: MEMA 648.

MEEN 674/ECEN 608 Modern Control**Credits 3. 3 Lecture Hours.**

Vector Norms; Induced Operator Norms; Lp stability; the small gain theorem; performance/robustness trade-offs; L1 and Hoo optimal P control as operator norm minimization; H2 optimal control.

Prerequisite: ECEN 605 or equivalent.

Cross Listing: ECEN 608/MEEN 674.

MEEN 678 Aerosol Mechanics**Credits 3. 3 Lecture Hours.**

Provides the basis for understanding and modeling aerosol behavior; mechanical, fluid dynamical, electrical, optical and molecular effects are considered; applications include sprays and atomization, aerosol collection, aerosol sampling and visibility.

Prerequisite: Graduate classification in engineering or approval of instructor.

MEEN 679 Spectral Methods in Heat Transfer and Fluid Flow**Credits 3. 3 Lecture Hours.**

Introduces theoretical and applications aspects of spectral and multi-domain spectral methods for computational heat transfer and fluid flow problems.

Prerequisites: MEEN 357, MEEN 344, MEEN 461; graduate classification.

MEEN 680 Optical Techniques for Engineers**Credits 3. 3 Lecture Hours.**

Basic optical theories and their practical applications with an emphasis on flow visualization for thermal and fluid engineering; operating principles and applications of at least seven different optical diagnostic instruments.

Prerequisite: Graduate classification.

MEEN 681 Seminar**Credits 0-1. 0-1 Other Hours.**

Current research in a wide range of fields described by guest lecturers who are prominent in their fields. Discussion period at the end of each lecture will permit the students to learn more about the lecturer and his/her work.

Prerequisite: Graduate classification in mechanical engineering.

MEEN 683 Multidisciplinary System Analysis and Design Optimization**Credits 3. 3 Lecture Hours.**

Overview of principles, methods and tools in multidisciplinary system analysis and design optimization; engineering systems modeling for analysis, design and optimization; design variable selection, objective functions and constraints; subsystem identification and interface design; gradient-based and heuristic search methods; multi-objective optimization and Pareto optimality.

Prerequisite: Graduate classification.

MEEN 684 Professional Internship**Credits 1 to 16. 1 to 16 Other Hours.**

Supervised work in an area closely related to the specialized field of study undertaken by a Master of Engineering, Master of Science or Doctoral candidate.

Prerequisite: Admission to a specialized Master of Engineering, Master of Science or Doctoral program in mechanical engineering.

MEEN 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Content will be adapted to interest and needs of group enrolled.

MEEN 687 Additive and Subtractive Processes in Custom Manufacturing**Credits 3. 3 Lecture Hours.**

Machining theory; traditional and non-traditional machining processes; CNC machines and tools; geometric dimensioning and tolerance (GD&T); additive manufacturing systems and processes; materials in additive manufacturing.

Prerequisites: MEEN 361 & MEEN 360 or equivalent.

MEEN 688 Advanced Solid Mechanics**Credits 3. 3 Lecture Hours.**

Derive approximate solutions of engineering mechanics problems by using suitable assumptions; understand the nature of the approximations and their effects on the accuracy of the resulting mechanics-of-materials solutions; apply the principles of advanced mechanics of materials to analyze deformation and failure problems common in engineering design and materials science; prepare for success in more advanced mechanics courses such as elasticity, energy methods, continuum mechanics and plasticity.

Prerequisite: Mechanics of materials, advanced calculus, differential equations.

MEEN 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Special topics in an identified area of mechanical engineering. May be repeated for credit.

Prerequisite: Approval of instructor.

MEEN 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Methods and practice in mechanical engineering research for thesis or dissertation.

MEEN 692 Professional Study**Credits 1 to 9. 1 to 9 Other Hours.**

Approved professional study or project; may be taken more than once, but not to exceed 6 hours of credit toward a degree. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of instructor.

MEEN 693 Solar Energy Engineering**Credits 3. 3 Lecture Hours.**

Introduction to solar energy; solar angles and radiation; solar photovoltaics; solar cell manufacturing; solar thermal systems; solar water heating and space heating; concentrated solar power; solar energy storage; economic analysis.

Prerequisites: Graduate classification.

MEEN 694 Comparative Biomechanics**Credits 3. 3 Lecture Hours.**

Application of concepts and methods of mechanics to aspects of animal life with a focus on structure and movement; how life forms have evolved different solutions to accomplish terrestrial locomotion, flight, motion in water, heat transfer, procurement of energy, structural stability and function, work and nutrient transport.

Prerequisites: Graduate classification.

MEID - Medicine-Interdisci

MEID 605 Foundations of Medicine I**Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Basic principles of histology and physiology of human organ systems in an integrated fashion; understanding how organ structure and function of the human body interrelate; core knowledge provides a foundation for examining the pathophysiologic basis of human disease.

Prerequisite: Admission to medical school.

MEID 606 Foundations of Medicine II**Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Integrated material in basic principles of medical biochemistry, genetics and pharmacology.

Prerequisite: Admission to medical school.

MEID 607 Medical Gross Anatomy**Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Human gross anatomy including integrated dissection-based teaching and application of anatomic principles to patient care.

Prerequisite: Admission to medical school.**MEID 608 Neuroscience****Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Correlation of the basic knowledge of central and peripheral nervous system structure and function with vulnerability to injury/disease and the resulting dysfunctional consequences and pharmacotherapeutics available to clinicians caring for patients with common neurological or psychiatric disorders; common presentation, diagnosis and treatments.

Prerequisite: Admission to medical school.**MEID 609 Introduction to Disease****Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Fundamental topics in immunology, microbiology, pathology, pharmacology and patient interactions; presented in a case-based fashion; topics form a foundation for deeper understanding of the pathophysiologic basis of human diseases presented during the organ system-based blocks.

Prerequisite: Admission to medical school.**MEID 614 Evidence Based Medicine, Scholarship and Research I****Credits 0 to 15. 0 to 15 Lecture Hours.**

Develop research, investigative skills and problem solving, and support skill development in critical appraisal of medical literature as it relates to patient care.

MEID 616 Cardiovascular**Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Normal physiology and pathophysiology and diseases of the heart and vascular system; abnormalities including hypertension, atherosclerosis, congenital and valvular heart diseases and diseases of cardiac muscle and its electrical system; basic therapeutic approaches to these diseases and their impact on individuals and society.

Prerequisite: Admission to medical school.**MEID 617 Respiratory****Credits 1 to 15. 1 to 15 Lecture Hours. 0 to 15 Lab Hours.**

Normal physiology and pathophysiology of diseases of the respiratory system; clinical presentation, diagnosis and treatment of various types of respiratory diseases, such as obstructive, inflammatory, neoplastic and other pulmonary and upper respiratory conditions.

Prerequisite: Admission to medical school.**MEID 618 Medical Student Grand Rounds****Credits 0 to 15. 0 to 15 Lecture Hours.**

Apply, primarily, knowledge of biochemistry and genetics; receive didactic instruction in literature search skills and examine a specific medically relevant topic in depth; give presentation about this topic to peers and faculty in a small group setting.

MEID 619 Practice of Medicine I**Credits 1 to 15. 1 to 15 Lecture Hours.**

Introduction to clinical and professional behaviors, concepts, skills and clinical reasoning necessary for the humanistic practice of medicine; complete, document and present a patient encounter; further awareness of patient-physician communication, ethics and medico-legal issues, interprofessional dynamics and the medical hierarchy, patient safety issues, cultural competence and student/clinician wellness.

Prerequisite: Admission to medical school.**MEID 620 Practice of Medicine II****Credits 1 to 15. 1 to 15 Lecture Hours.**

Development of patient encounter expertise; development of professional identity and history, physical, examination and clinical reasoning skills with special populations; expand awareness of patient-physician communication, ethics and medico-legal issues, inter-professional dynamics and the medical hierarchy, patient safety issues, cultural competence, diversity, social determinants of disease, and student and clinician wellness.

Prerequisite: Admission into the College of Medicine.**MEID 685 Directed Studies****Credits 1 to 15. 1 to 15 Other Hours.**

Designed to provide opportunities to refine skills in self-directed learning; students and faculty will identify deficiencies, set personal goals and develop an implementation plan to reach goals; meetings scheduled individually as required and completion determined by goals set; typically involves sitting for a National Board Exam. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Admission to medical school.**MEID 691 Research****Credits 1 to 9. 1 to 9 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of supervisory professor in chosen field.**MEID 701 Hematology/Oncology****Credits 1 to 10. 1 to 10 Lecture Hours.**

This block covers relevant and important topics in Hematology and Oncology. Using a variety of teaching formats, the pathophysiology and clinical presentation of hematologic and oncologic diseases will be discussed. The student will also be introduced to therapy for such diseases.

Prerequisite: Completion of Phase I Curriculum.**MEID 702 Cardiovascular****Credits 0.50 to 8. 0.50 to 8 Lecture Hours.**

Normal physiology, pathophysiology and diseases of the heart and vascular system; abnormalities including hypertension, atherosclerosis, congenital and valvular heart diseases and diseases of cardiac muscle and its electrical system; emphasis on how cardiovascular disease impacts the individual patient as well as society.

Prerequisite: Completion of Phase I Curriculum.**MEID 703 Respiratory****Credits 0.50 to 8. 0.50 to 8 Lecture Hours.**

Normal physiology, pathophysiology and diseases of the respiratory system; clinical presentation, diagnosis and treatment of various types of respiratory diseases such as obstructive, inflammatory, neoplastic and other pulmonary and upper respiratory conditions.

Prerequisite: Completion of Phase I Curriculum.**MEID 704 Renal Genitourinary****Credits 0.50 to 8. 0.50 to 8 Lecture Hours.**

Normal physiology, pathophysiology and diseases of the body fluids, kidney and lower genitourinary tract excluding the reproductive system; fluid and electrolyte and acid-base disorders; renal diseases including clinical presentation, diagnosis and treatment; visitation to a renal dialysis unit.

Prerequisite: Completion of Phase I Curriculum.

MEID 706 Metabolism/Gastrointestinal/Nutrition**Credits 1 to 10. 1 to 10 Lecture Hours.**

Normal physiology, pathophysiology and diseases of the gastrointestinal system and its associated glands; discussion on diseases with respect to biochemical aspects, clinical presentations, diagnostic tests and treatment; topics on nutrition relative to the cause of disease and clinical disease management.

Prerequisite: Completion of Phase I Curriculum.**MEID 707 Endocrinology, Reproductive Science, Human Sexuality****Credits 0.50 to 8. 0.50 to 8 Lecture Hours.**

Normal physiology, pathophysiology and diseases that affect the endocrine and reproductive systems; clinical presentation, diagnosis and treatment of these diseases; relevant topics on human sexuality presented in various formats.

Prerequisite: Completion of Phase I Curriculum.**MEID 708 Integument-Musculoskeletal****Credits 0.50 to 8. 0.50 to 8 Lecture Hours.**

Basic physiology of muscle and pathophysiology and diseases involving the skeleton, joints, soft tissues and skin; including disease related to calcium and bone metabolism and autoimmune disease; clinical presentation, diagnosis and treatment.

Prerequisite: Completion of Phase I Curriculum.**MEID 710 Humanities, Ethics, Altruism and Leadership III****Credits 1 to 15. 1 to 15 Lecture Hours.**

Continuation of the consolidation of the HEAL (Humanities, Ethics, Altruism, Leadership) concepts into a second semester, case-based study; cases from medical/inter-professional rounds and presentations used to help learn and apply the following medical humanities subjects: past, present and future of medicine, medical ethics, medical finance, spirituality, clinician resilience, communication skills, cultural competence, inter-professional collaboration, medical law, palliative care, patient navigation, professionalism, service learning and systems-based practice.

Prerequisite: Admission into the College of Medicine.**MEID 711 Evidence Based Medicine, Scholarship and Research****Credits 1 to 15. 1 to 15 Lecture Hours.**

Continued development of critical appraisal and application of biostatistical skills in literature review; quantitative techniques in evaluating randomized controlled trials, observational studies and clinical practice guidelines; advanced participation in team based learning/ journal club; continued research ethics training and introduction to research opportunities.

Prerequisite: Admission into the College of Medicine.**MEID 712 Practice of Medicine III****Credits 1 to 15. 1 to 15 Other Hours.**

Reinforcement of clinical and professional behaviors, concepts, skills and clinical reasoning necessary for the humanistic practice of medicine; rotation through primary care experiences in family medicine, internal medicine, pediatrics, gynecology, otorhinolaryngology, obstetrics, ophthalmology, dermatology and orthopedics.

Prerequisite: Admission to Medical School.**MEID 750 Foundations in Health Systems Science****Credits 1 to 10. 1 to 10 Lecture Hours.**

Foundational concepts in health systems science; emphasis on population health, healthcare structures and processes, patient safety, quality improvement, healthcare financing and value, systems thinking; required for Health Systems Science Track.

Prerequisite: Admission to medical school.**MEID 751 Reframing Clinical Care in the Context of Health Systems Science****Credits 1 to 10. 1 to 10 Lecture Hours.**

Second in a series for the Health Systems Science track; multidisciplinary case based discussion format with independent study. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Admission to medical school.**MEID 800 Professionalism IV****Credits 2.5. 2.5 Other Hours.**

Required two-week capstone course for all fourth year medical students. The course is designed to educate students about relevant aspects of medical jurisprudence, including state and federal regulations and applicable laws and risk management. In addition to law, the course addresses other topics of practical relevance to their professional careers and provides a refresher on medical topics which will be needed as they begin internship such as pain management, dosing and proper prescribing techniques. The course also provides advice on practice management, personal and professional financial planning and reviews the process for licensure and credentialing. Ethics and professionalism are also addressed.

MEID 801 Healthcare Advocacy and Public Policy**Credits 2.50 to 7. 2.50 to 7 Lecture Hours.**

Work with designated faculty, staff at the medical school, in advocacy and legal affairs offices such as those of the Texas Medical Association and/or physician specialty organizations surrounding advocacy issues that are topical and/or relevant to their interests. Specific duties may include conducting background research, meeting with legislators, constituencies and key community stakeholders, developing and/or implementing a communications strategy (including fact sheets and 'elevator' speeches), and drafting a report, analysis, or model legislation. Non-legislative community advocacy activities may include visiting with non-profit community based programs dependent on public or private funding and identifying an opportunity for a longitudinal advocacy project or contribution to an existing project on a short term basis.

MEID 803 Multidisciplinary Clinical Neuroscience**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Introductory experience in the practice of neurosciences.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**MEID 804 USMLE Mentorship****Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

Provide fourth year students with an opportunity to teach and develop curricular materials related to the USMLE Step 1 exam. Students will receive instruction on the management and instruction of small groups, prepare for and lead small groups of M2 studying for the USMLE Step 1 exam, and develop curricular materials related to USMLE Step 1 exam. Small groups will meet in Temple and BCS. This course will involve a shift schedule with students required to complete a prescribed number of hours to receive credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.

MEID 805 Computer Resources for Professional Development
Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.

Familiarize students with lifelong learning tools that will assist them as residents and future leaders. Students will use online resources to find, organize, and create information to support their professional development and lifelong learning goals. This elective will focus on the following: communication and conflict management; professional career development; recognizing deficiencies in your knowledge; utilizing information resources in lifelong learning and understanding the importance of scholarly work within residency. These concepts are introduced through self-paced and self-directed modules, which give students an opportunity to reflect on their own needs for now and for their future as physicians. The graded exercises are short answer; document creation (personal statement outline; CV; budget spreadsheet etc.) and self-reflection pieces.

MEID 806 Wilderness and Disaster Medicine
Credits 1.25 to 6.3. 1.25 to 10 Other Hours.

Wilderness and disaster medicine both require meeting the challenges of working in a low resource environment. In wilderness medicine, this environment could result from being in a remote location with few resources, while disaster medicine typically results in having your resources overwhelmed. Both require a need to look at delivering medical care from a unique perspective that is not readily taught in most hospital or clinic based practices. In addition, both require exceptional leadership and teamwork to achieve optimum outcomes. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: 4th year status.

MEID 807 Internship Bootcamp

Credits 1.25 to 2.5. 1.25 to 2.5 Other Hours.

Participation in 1-2 weeks of simulated patient encounters that cover top calls interns can expect on night call; cases match and cover Core Entrustable Professional Activities set by the AAMC which should be possessed at graduation; ethical scenarios, interpersonal communication with families and interdisciplinary professional communication topics; formative assessment, self-assessment and summative assessment. Must be taken on a pass/fail basis.

Prerequisite: Completion of third year medical school requirements.

MEID 810 Connecting and Communicating with Patients and Peers
Credits 1 to 15. 1 to 15 Other Hours.

Exposure to verbal and nonverbal communication techniques that facilitate greater connection with patients and their families; includes establishing a relationship, gathering information through patient-interviews, transmitting information effectively, negotiating treatment, explaining mistakes, negotiating and resolving conflict and closing sessions without making patients feel rushed or dismissed; underpinnings of an effective doctor-patient relationship, namely a genuine understanding of patient experience which encompasses end-of-life concerns, concerns about aging and body image and fears about medical procedures and chronic illness; building effective communication with colleagues.

Prerequisite: Admission to medical school.

MEID 811 Medicine in the Wild

Credits 1 to 15. 1 to 15 Other Hours.

Learn and practice wilderness medicine on an extended wilderness expedition in the Gila Wilderness of New Mexico; includes National Outdoor Leadership School (NOLS) core curriculum and Wilderness Medicine Institute (WMI) wilderness medicine curriculum.

Prerequisite: Admission to medical school.

MEID 814 Health Systems Science Education
Credits 1.25 to 10. 1.25 to 10 Other Hours.

25 to 10. Analyze current and proposed health science system courses for gaps; design offerings to address gaps; utilized data to evaluate current courses and develop outcome measures for health science system courses. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Admission to medical school.

MEID 850 Practice of Medicine Capstone

Credits 1.25 to 10. 1.25 to 10 Other Hours.

25 to 10. Required 2-week capstone for fourth year medical students; designed to educate on relevant aspects of medical jurisprudence, including state and federal regulations and applicable laws and risk management; addresses other topics of practical relevance to professional careers and provides a refresher on medical topics needed for internships such as pain management, dosing and proper prescribing techniques; advice on practice management, personal and professional financial planning and reviews the process for licensure and credentialing; ethics and professionalism.

Prerequisite: Fourth year classification.

MEID 974 Systems Based Practice IV

Credit 1.5. 1.5 Other Hour.

The System Based Practice (SBP) thread (SBPI, SBPII, SBPIII, and SBPIV) consists of 17 IHI Open School for Health Professions courses as well as is a team based approach to integrating the concepts through the TBL sessions. This material and interaction will provide students the skills to become change agents in health care improvement. The focus is: quality improvement, patient safety, teamwork, leadership, and patient-centered care.

MEID 985 Special Topic

Credits 1.25 to 12. 1.25 to 12 Other Hours.

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MEID 989 Special Topics in Interdisciplinary Medicine

Credits 1.25 to 12. 1.25 to 12 Lecture Hours.

Connecting topics and issues across disciplines to enhance what is learned in clinical clerkships by applying interdisciplinary perspectives; develop knowledge, skills, and professional values in an ongoing reflective manner throughout the clinical years of medical school.

MEID 997 Critical Care - Student Initiated Elective

Credits 1.25 to 15. 1.25 to 15 Other Hours.

25 to 15. Comprehensive problem oriented approach to critically ill patients; understand and manage complex medical problems; evidence-based medicine approaches to critical care across life span; manage own panel of patients; interprofessional work with other staff (nurses, case managers, etc); may perform certain diagnostic procedures under supervision.

MEID 998 Acting Internship - Student Initiated Elective

Credits 1.25 to 15. 1.25 to 15 Other Hours.

25 to 15. Four week experience in inpatient setting; participation in all aspects of patient management; management of own panel of patients; interprofessional work with other staff such as nurses and case managers; may perform certain diagnostic procedures under supervision.

MEID 999 Medicine Interdisciplinary – Problems**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus, interdisciplinary opportunity in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the heads of the appropriate departments for additional details.

MEMA - Mechanics and Materials

MEMA 601 Theory of Elasticity**Credits 3. 3 Lecture Hours.**

Analysis of stress and strain in two and three dimensions, equilibrium and compatibility equations, strain energy methods; torsion of noncircular sections; flexure; axially symmetric problems.

Prerequisite: Mechanics of Materials, Advanced Calc Different Equations.**Cross Listing:** AERO 605 and MEEN 603.**MEMA 602/AERO 603 Continuum Mechanics****Credits 3. 3 Lecture Hours.**

Development of field equations for analysis of continua (solids as well as fluids); conservation laws; kinematics, constitutive behavior of solids and fluids; applications to aerospace engineering problems involving solids and fluids.

Prerequisite: Graduate classification.**Cross Listing:** AERO 603/MEMA 602.**MEMA 606 Multifunctional Materials****Credits 3. 3 Lecture Hours.**

In-depth analysis of multifunctional materials and composites, and their novel applications.

Prerequisites: MEMA 602/AERO 603/AERO 603/MEMA 602, MSEN 601.**Cross Listing:** AERO 606 and MSEN 606.**MEMA 608 Nanomechanics****Credits 3. 3 Lecture Hours.**

Application of mechanics concepts to nano-scale behavior of materials. Review of continuum mechanics; Extensions to generalized continua; Nonlocal elasticity; Nano-scale plasticity. Focus on multi-scale modeling: Dislocation Dynamics; Quasi-Continuum method; Molecular dynamics with introductions to quantum mechanics and statistical mechanics.

Prerequisite: AERO 603/MEMA 602.**Cross Listing:** AERO 608 and MSEN 608.**MEMA 611 Fundamentals of Engineering Fracture Mechanics****Credits 3. 3 Lecture Hours.**

Understanding of the failure of structures containing cracks with emphasis on mechanics; linear elastic fracture mechanics, complex potentials of Muskhelishvili and Westergaard, J-integral, energy release rate, R-curve analysis, crack opening displacement, plane strain fracture toughness testing, fatigue crack propagation, fracture criteria, fracture of composite materials.

Prerequisite: AERO 603/MEMA 602.**MEMA 612/AERO 612 Wave Propagation in Isotropic and Anisotropic Solids****Credits 3. 3 Lecture Hours.**

Mathematical and experimental methods of studying stress waves with emphasis on anisotropic solids, e.g., fiber-reinforced composite materials; waves in an unbounded medium, in a half-space, in rods; waves in a general anisotropic medium; wave surface, slowness surface, velocity surface, energy velocity and group velocity.

Prerequisite: MEMA 601 or AERO 603/MEMA 602.**Cross Listing:** AERO 612/MEMA 612.**MEMA 613/MSEN 610 Principles of Composite Materials****Credits 3. 3 Lecture Hours.**

Classification and characteristics of composite materials; micromechanical and macromechanical behavior of composite laminae; macromechanical behavior of laminates using classical laminate theory; interlaminar stresses and failure modes; structural design concepts, testing and manufacturing techniques.

Prerequisite: MEMA 602/AERO 603.**Cross Listing:** MSEN 610/MEMA 613.**MEMA 616 Damage and Failure in Composite Materials****Credits 3. 3 Lecture Hours.**

Mechanisms and models related to damage and failure in composite materials subjected to mechanical loads.

Prerequisite: Courses in composite materials, elasticity.**Cross Listing:** AERO 616 and MSEN 636.**MEMA 625/AERO 617 Micromechanics****Credits 3. 3 Lecture Hours.**

Eigenstrains; inclusions, and inhomogeneities; Eshelby's solution for an ellipsoidal inclusion; Eshelby's equivalent inclusion method. Effective elastic properties of composites; composite spheres and cylinders models; bounds on effective moduli; Hashin-Shtrikman bounds; applications to fiber, whisker and particulate reinforced composites; introduction to micromechanics of inelastic composites and solids with damage.

Prerequisite: MEMA 602/AERO 603.**Cross Listing:** AERO 617/MEMA 625.**MEMA 626/AERO 618 Mechanics of Active Materials****Credits 3. 3 Lecture Hours.**

Introduction to coupled field theories: constitutive response of materials with thermal and electromagnetic coupling; microstructural changes due to phase transformations; shape memory alloys; piezoelectric and magnetostriuctive materials; active polymers and solutions. Micromechanics of active composites.

Prerequisite: MEMA 602/AERO 603.**Cross Listing:** AERO 618/MEMA 626.**MEMA 634/CVEN 753 Damage Mechanics of Solids and Structures****Credits 3. 3 Lecture Hours.**

Damage mechanics; constitutive modeling of damage behavior of materials; application of thermodynamic laws; computational techniques for predicting progressive damage and failure; plasticity; viscoplasticity; viscoelasticity; cohesive zone modeling; fatigue and creep damage; damage in various brittle and ductile materials (e.g., metal, concrete, polymer, ceramic, asphalt, biomaterial, composites).

Prerequisite: CVEN 633 or approval of instructor.**Cross Listing:** CVEN 753/MEMA 634.**MEMA 635 Structural Analysis of Composites****Credits 3. 3 Lecture Hours.**

Formulation and analysis structural response of laminated composite components; bending, vibration and stability of laminated composite plates; interlaminar stresses, effect of shear deformation on structural response; numerical modeling of laminated plates.

Prerequisite: MEMA 613/MSEN 610.**MEMA 641/MSEN 641 Plasticity Theory****Credits 3. 3 Lecture Hours.**

Theory of plastic yield and flow of two and three-dimensional bodies; classical plasticity theories, unified viscoplastic theories, numerical considerations; applications and comparisons of theory to experiment.

Prerequisite: MEMA 602/AERO 603.**Cross Listing:** MSEN 641/MEMA 641.

MEMA 646 Introduction to the Finite Element Method**Credits 3. 3 Lecture Hours.**

Weak or variational formulation of differential equations governing one- and two-dimensional problems of engineering; finite element model development and analysis of standard problems of solid mechanics (bars, beams and plane elasticity), heat transfer and fluid mechanics; time-dependent problems; computer implementation and use of simple finite element codes in solving engineering problems.

Prerequisite: Senior or graduate classification.**MEMA 647 Theory of Finite Element Analysis****Credits 3. 3 Lecture Hours.**

Finite elements models of a continuum; virtual work principle; plane stress and plane strain finite element models; bending of plates; axisymmetric problems; three-dimensional stress analysis; isoparametric formulations; finite element computer programs to solve typical structural problems.

Prerequisite: Graduate classification or approval of instructor.**MEMA 648 Nonlinear Finite Element Methods in Structural Mechanics****Credits 3. 3 Lecture Hours.**

Tensor definitions of stress and strain, finite strain, geometric and material nonlinearities; development of nonlinear finite element equations from virtual work; total and updated Lagrangian formulations; solution methods for nonlinear equations; computational considerations; applications using existing computer programs.

Prerequisite: MEMA 647 or equivalent.**MEMA 649/AERO 649 Generalized Finite Element Methods****Credits 3. 3 Lecture Hours.**

Systemic introduction to the theory and practice of generalized finite element (FE) methods, including GFEM, the hp-cloud method, particle methods and various meshless methods with similar character; precise formulation of the methods are presented; known theoretical results for convergence; important issues related to implementation, issues of numerical integration.

Prerequisite: Graduate student status.**Cross Listing:** AERO 649/MEMA 649.**MEMA 651 Viscoelasticity of Solids and Structures I****Credits 3. 3 Lecture Hours.**

Linear, viscoelastic mechanical property characterization methods, time-temperature equivalence, multiaxial stress-strain equations; viscoelastic stress analysis; the correspondence principle, approximate methods of analysis and Laplace transform inversion, special methods; static and dynamic engineering applications; nonlinear behavior.

Prerequisite: Approval of instructor.**MEMA 670 Computational Materials Science and Engineering****Credits 3. 3 Lecture Hours.**

Modern methods of computational modeling and simulation of materials properties and phenomena, including synthesis, characterization, and processing of materials, structures and devices; quantum, classical, and statistical mechanical methods, including semi-empirical atomic and molecular-scale simulations, and other modeling techniques using macroscopic input.

Prerequisites: Approval of instructor; graduate classification.**Cross Listing:** MSEN 670 and CHEN 670.**MEMA 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of mechanics and materials. May be repeated for credit.

Prerequisite: Approval of instructor.

MEPS-Molecular & Env Plant Sci

MEPS 601 Physiology of Plants**Credits 3. 3 Lecture Hours.**

Advanced physiology of higher plants, includes water relations, mineral metabolism, biochemistry, growth, development, hormones, environmental signals and stress physiology. Emphasis on current literature and research trends; cellular and sub-cellular mechanisms related to whole plant behavior.

Prerequisites: BICH 410 and MEPS 313 or approval of instructor.**MEPS 605/HORT 607 Plant Biochemistry****Credits 3. 3 Lecture Hours.**

Major metabolic pathways in plant metabolism; emphasis on biochemistry unique to plants.

Prerequisites: BICH 410; MEPS 313 or equivalent.**Cross Listing:** HORT 607/MEPS 605.**MEPS 610/HORT 610 Physiological and Molecular Basis for Plant Stress Response****Credits 3. 3 Lecture Hours.**

Provide the tools to understand the molecular and physiological consequences caused by environmental factors (abiotic and biotic) on plant growth and development and the mechanisms of stress adaptation to stress.

Prerequisite: MEPS 313 or equivalent.**Cross Listing:** HORT 610/MEPS 610.**MEPS 618/HORT 618 Root Biology****Credits 3. 3 Lecture Hours.**

Basic concepts and current topics in root-soil ecology; managed and natural ecosystems including grasslands, cropping systems and forests; role of roots in the rhizosphere, the effects of soil, nutrient and water stress and climate change in C and N cycling and carbon sequestration; participate in discussions and critique recent literature.

Prerequisite: Approval of instructor.**Cross Listing:** HORT 618/MEPS 618.**MEPS 619 Plant-Associated Microorganisms****Credits 3. 3 Lecture Hours.**

Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improved plant health and sustainable agriculture; microbial roles in food safety and future challenges; discussion of current literature.

Prerequisites: Basic plant biology or plant ecology is recommended; microbiology is helpful, but not required. Cross listed with HORT 619 and MEPS 619.

MEPS 620 Plant Cell Structure and Function**Credits 3. 3 Lecture Hours.**

Overview of plant cell organization, function and physiology to incorporate whole-plant processes with sub-cellular, molecular and genetic mechanisms; origin of eukaryotic cells, nuclear organization and processes, cell cycle, organelle biogenesis and inheritance, photosynthesis, endomembrane system, cell trafficking, symplast, cytoskeleton, extracellular matrix, cell wall, disease, plant microbe interaction, development and differentiation.

Prerequisites: MEPS 313 or equivalent, graduate classification, or permission of the instructor.

MEPS 650 Plant Cell Culture for Crop Improvement**Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Focus on techniques in plant cell culture which can be applied to all crop plants, including agronomic crops, horticulture and forestry crops for germplasm improvement.

Prerequisites: MEPS 313; CHEM 101; graduate classification.

MEPS 654 Analysis of Complex Genomes**Credits 3. 3 Lecture Hours.**

History and current status of genetic and molecular analysis of higher eukaryotic genomes; coverage of techniques for dissection of genomes into manageable parts; investigations in genetics, breeding and evolution; emphasis on quantitative inheritance, genetic mapping, physical mapping, map-based cloning, with examples drawn from a wide range of organisms.

Prerequisite: GENE 603 or GENE 431/BICH 431.

Cross Listing: GENE 654 and SCSC 654.

MEPS 655 Analysis of Complex Genomes—Lab**Credits 3. 7 Lab Hours.**

Analysis of Complex Genomes—Lab. Laboratory methods in molecular genetic techniques for genetic mapping, physical mapping, and map-based cloning of both qualitative and quantitative phenotypes.

Prerequisite: GENE 603 or equivalent or approval of instructor.

Cross Listing: SCSC 655 and GENE 655.

MEPS 671/SCSC 671 Plant Growth and Development**Credits 3. 3 Lecture Hours.**

Comprehensive analysis of plant development primarily focused on the molecular and cellular processes underlying morphogenesis, vegetative growth and reproduction; role of the major phytohormones as coordinators of development will be analyzed; plastic development responses to conditioning environmental signals.

Prerequisites: MEPS 601 or approval of instructor.

Cross Listing: SCSC 671/MEPS 671.

MEPS 681 Seminar**Credit 1. 1 Other Hour.**

Professional development for students pursuing careers in plant physiology; oral and poster presentations, writing skills, grantsmanship, job search and the promotion and tenure process.

MEPS 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Individual problems or research not pertaining to thesis or dissertation.

Prerequisite: MEPS 313.

MEPS 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.**

Selected topics in an identified area of plant physiology. May be repeated for credit.

Prerequisite: Approval of instructor.

MEPS 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Original investigations in support of thesis or dissertation.

MFCM - Family & Commu Medicine

MFCM 600 Introduction to Clinical Skills I**Credits 2. 2 Lecture Hours.**

Introduction to patient care: medical vocabulary, professional conduct, patient interviewing, how to take and record a medical history, clinical reasoning based on the chief complaint.

Prerequisite: Admission to Medical school.

MFCM 601 Introduction to Clinical Skills II**Credits 2. 2 Lecture Hours.**

Performing the physical exam, integrating history and physical exam to formulate the differential diagnosis.

MFCM 800 Family Medicine Clerkship**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

25 to 15. Introductory experience in the practice of family medicine.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MFCM 801 Family Medicine Outpatient Clinic**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will provide a conducive learning environment for advanced experience in managing common ambulatory illness. It will expose the student to clinical learning situations that provide an opportunity for the students to enhance and improve the skills required of a family practitioner, including history, physical, differential diagnosis, evaluation and treatment regimens. It will illustrate the broad aspects of the practice of Family Medicine as a specialty that strives for continuity, quality, and comprehensive care, and an emphasis on the patient with a disease in the context of his environment. It will allow the student to become comfortable with his assessments and develop confidence in his therapeutic decisions. The student will be mentored in a fashion that clearly demonstrates that the Family Physician plays a vital role as a patient advocate that honors life.

MFCM 802 Indigent Health Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Participants will actively manage the student-run clinic at HFA, mentor and teach M1 and M2 students in their clinical assessment and presentation skills, and assist M1 and M2 students in medical record preparation. All aspects occur under direct, on site supervision, by Health Science Center faculty.

MFCM 805 Ambulatory Family Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This course will provide a learning environment for advanced experience in managing common ambulatory illnesses. During this private practice experience, students will be exposed to clinical learning situations that provide an opportunity to enhance and improve the skills required of a family physician. The core values of Family Medicine as a specialty will be emphasized including striving for continuity of care, quality of care, and an emphasis on the patient with a disease in the context of his environment. Students should become comfortable with their assessments and develop confidence in their therapeutic decisions while on this rotation.

MFCM 806 Family Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. For students to become familiar with issues in hospital-based health care delivery, effective utilization of resources, and improving quality of care among hospitalized patients. Students will also have time in outpatient care, developing similar strategies. Opportunities exist for observing minor surgical cases and performing bedside procedures such as central venous line placement, lumbar puncture, paracentesis, and thoracentesis. Allow the student to assume responsibility, with staff supervision, for inpatient diagnostic workup, management, and discharge planning. Expose fourth year medical students to the lifestyle of family medicine physicians, with respect to inpatient care, as well as familiarizing the student with duties associated with internship. This opportunity allows responsibility while under supervision and permits the student an intimate look at the demands and rewards of primary care. Night call is required.

MFCM 807 Palliative Medicine and End of Life Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. In this course, the faculty will strive to provide basic information on the interdisciplinary approach to palliative and end-of-life care. The student will be taught skills needed to improve communication with patients with chronic or terminal diseases and appropriate methods of delivering bad news. The student will learn medical management of pain and selected non-pain symptoms in patients with life limiting illness. The student will develop understanding of the comprehensive nature of end-of-life care, the distinctive nature of its patient care model, and its significant place in today's healthcare arena. No night call required.

MFCM 808 Wound Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This course offers extensive clinical experience in comprehensive wound care, including the use of the latest dressings, sharp debridement, administration and interpretation of transcutaneous oxygen monitoring, application of bioengineered skin products, application of total contact casting, compression therapy and hyperbaric oxygen therapy. At the end of the elective, the student should be able to distinguish between various types of wounds, determine the etiology of common wounds, and understand the various reasons chronic wounds do not heal. Night or weekend call will not be required, but may be optional if student wishes to be called for emergency Hyperbaric Oxygen Treatments. No night call required.

MFCM 809 Indigent Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Participants will actively be involved in the management of patients at the Healing Hands Ministries Medical Clinic. The clinic is the medical home for many uninsured patients, helping them avoid expensive area hospital ER visits for primary care. Patients receive comprehensive medical and dental services including pediatric care, well-woman care, diabetic education, laboratory services, asthma education, prescription drug benefits, monthly immunizations, social service referral, and specialty care clinics such as orthopedics and arthritis. Healing Hands collaborates with other community providers to coordinate referrals outside its scope of services including extensive diagnostic testing and surgical services. The elective is designed to expose students to the scope of health issues of the medically uninsured and underinsured. Students will become familiar with various community organizations striving to improve the health of its citizens. Students will understand the importance of promoting public health and gain insight into the practice of preventative medicine and the impact it will have on patients' health in the future. All aspects occur under direct, on-site supervision by faculty. Night call is not required.

MFCM 810 Healthcare for the Underserved**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The elective is designed to expose students to the scope of health issues of patients who are indigent and lack access to health insurance. Students will become familiar with various community organizations striving to improve the health of its underserved citizens. Students will understand the importance of promoting public health and gain insight into the practice of preventive medicine and the impact it will have on patients' health in the future. Clinical experiences will primarily be at the Baylor Community Care clinics, with some exposure to home visits with the home visit team. Students will work with family medicine and internal medicine physicians, nurse practitioners, community health workers and social workers to understand the importance of a multidisciplinary team approach to patient care.

MFCM 811 Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will strive to: provide fourth year medical students with the opportunity to function as an "acting Intern" in the Intensive Care Unit supervised by upper level residents, Hospitalist Fellows and Attending Faculty. Teach fourth year students an evidence based approach to the care of critically ill patients in the ICU. Provide fourth year students with an in depth exposure to a variety of medical illnesses encountered in Internal Medicine. Allow the student to perform diagnostic procedures on their patients when indicated.

MFCM 812 Geriatric Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will strive to: increase student awareness of the unique characteristics of the elderly, understand the normal aging process, and differentiate this from disease. Improve the student's ability to assess and treat frail and acutely ill elderly patients, and recognize the unique aspects of drug therapy in the elderly. Expose the student to the concept of the multidisciplinary care team, in which a variety of health care professionals work together in order to enhance the care of complex patients. Team members include nurses, social workers, chaplains, physical therapist and others. Expose students to comprehensive geriatric assessment, community home services and other services that help to avoid or delay institutional care.

MFCM 813 Family Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will strive to: Expose fourth year medical students to the broad variety of patients, multiple challenges and rewarding lifestyle offered to a Family Physician. Provide students with inpatient and outpatient experiences, which will enhance their skills and prepare them for the duties of a First Year Resident. Provide students with increased responsibility for the care and management of patients with direct supervision from faculty and upper level residents. Provide ample opportunities for community activities to raise awareness of the social, political and economic barriers to health care.

MFCM 814 Inpatient Family Medicine Elective**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Offered at Memorial Hermann Southwest. The faculty will strive to provide students with a broad spectrum of patients and conditions; provide constructive feedback and guidance; provide increasing independence as appropriate; and familiarize the student with the benefits of an electronic medical record.

MFCM 815 Ambulatory Family Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Offered at Physicians at Sugar Creek. The faculty will strive to provide students with a broad spectrum of patients and conditions; provide one-on-one mentoring during the rotation; provide increasing independence as appropriate; and familiarize the student with the benefits of an electronic medical record.

MFCM 817 Indigent Health Care - Community Health**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The faculty will strive to expose senior medical student to the scope of health issues of the homeless and indigent. Students will gain insight to the mechanics and complexities of operating and organizing a primary care clinic. They will also interact with a variety of medical services including the Department of Health, Child/Adult Protective Services, and Mental Health and Mental Retardation.

MFCM 818 Family Practice Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. For students to become familiar with issues in hospital-based health care deliver, including DRG's, effective utilization of resources, and improving quality of care. Students will also have time in outpatient care, developing similar strategies. Opportunities exist for scrubbing in on minor surgical cases and performing bedside procedures such as central venous line placement, lumbar puncture, paracentesis, and thoracentesis.

MFCM 820 Indigent Health Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The elective is designed to expose students to the scope of health issues of the homeless and indigent. Students will become familiar with various community organizations striving to improve the health of its citizens. Students will understand the importance of promoting public health and gain insight into the practice of preventative medicine and the impact it will have on patients' health in the future.

MFCM 821 Family Practice Clinic Outpatient Clerkship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Students will be assigned to a Family Medicine Clinic, have a patient roster, and be responsible for evaluating, treating and following a variety of out-patients with close staff supervision. Hours are 8 - 5 PM, five days a week in the clinic, plus hospital rounds if the student admits a patient. This rotation is offered specifically to students who have a keen interest in Family Medicine, intend to seek residencies in Family Medicine or wish to sharpen their skills and broaden their knowledge in a primary care area. In addition, fourth year clerks from other institutions may take this rotation in order to acquaint themselves with the Scott and White Family Medicine Residency program.

MFCM 824 Family Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Need course description.

MFCM 850 Family Medicine Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The Family Medicine Acting Internship will provide additional in-depth experience in Family Medicine that allows the student to function as an intern while under supervision. The student will become familiarized with both the duties of internship as well as achieving proficiency in the skills requisite of a first-year resident.

MFCM 985 Off Campus Student Initiated Elective**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

25 to 15. Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MFCM 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

25 to 12. This is an on-campus opportunity in the department of Family and Community Medicine in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

MGMT - Management

MGMT 602 Markets and Public Policy**Credits 3. 3 Lecture Hours.**

Theoretical underpinnings of business decision making; function and structure of markets; effects of public policy on business activities; includes: antitrust; securities; labor discrimination; products liability.

Prerequisite: Graduate classification.**MGMT 610 Business and Public Policy****Credits 3. 3 Lecture Hours.**

Role of business organizations in the United States and other countries; topics pertaining to the external political and social environment of business and the implications for business managers including market failures and political failures as well as equity and ethical issues; case studies with business/government problems.

Prerequisite: Graduate classification.**MGMT 611 Microfoundations of Business Behavior****Credits 1 to 3. 1 to 3 Lecture Hours.**

A multi-disciplinary analysis of the foundations of business behavior discussing business interaction with customers under alternative market conditions and interaction with suppliers, investors, employees and other stakeholders, considered in the context of alternative legal, political and social institutional arrangements. Classification 6 students may not enroll in this course.

Prerequisites: Enrollment is limited to BUAD classification 7.**MGMT 612 Business Applications of Price Theory****Credits 3. 3 Lecture Hours.**

Application of price theory framework to decisions facing managers. Topics include political, legal and regulatory environments of business; corporate governance and antitakeover regulations; principal-agent problems in large corporations.

Prerequisite: Doctoral classification.**MGMT 613 Managerial Macroeconomics****Credits 1 to 3. 1 to 3 Lecture Hours.**

Analysis of domestic and global macroeconomic issues from a managerial perspective; analysis of current and historical macroeconomic events at the national and global levels; analysis of business cycles and monetary and fiscal policies; managerial decisions in the context of changing macroeconomic environment.

Prerequisite: Enrollment is limited to BUAD classification 7.**MGMT 614 Managing People in Organizations****Credits 1 to 3. 1 to 3 Lecture Hours.**

Procurement and management of people in organizations including human resource management principles and analysis of how organizations function; performance appraisal, compensation, training, leadership, group dynamics, decision-making, control mechanisms and organizational change processes. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment is limited to BUAD classification 7.**MGMT 618 Corporate Strategy and the Political Environment of Business****Credits 1 to 3. 1 to 3 Lecture Hours.**

Formulation and implementation of corporate strategy with consideration of the political environment of business. Classification 6 students may not enroll in this course.

Prerequisites: Enrollment is limited to BUAD classification 7.

MGMT 620 Managing Human Resources**Credits 3. 3 Lecture Hours.**

Survey of human resource management; formulation and implementation of human resource strategy addressed for areas including planning, recruitment, selection, job choice, training, development, appraisal, compensation, benefits, labor relations, international human resource issues and legal compliance.

Prerequisite: Graduate classification.**MGMT 621 Research Methods for HR Professionals****Credits 3. 3 Lecture Hours.**

Direct experience in formulation of HRM issues as hypotheses and selection and implementation of appropriate research designs and statistical tools to evaluate such hypotheses; properties of appropriate criteria, measures, designs and statistical tests in context of contemporary HRM issues; ethical issues in HRM research.

Prerequisites: STAT 651 or equivalent; graduate classification.**MGMT 622 Organizational Staffing****Credits 3. 3 Lecture Hours.**

Foundations and operating aspects of recruitment, selection and placement in various types of organizations; coverage of scientific and legal issues affecting human resource selection decisions from a managerial perspective; examination of the usefulness of various methods used in job analysis, selection, and performance appraisal; introduction to "job match" from various perspectives.

Prerequisite: Graduate classification.**MGMT 623 Compensation Management****Credits 3. 3 Lecture Hours.**

Strategic and technical considerations in the management of employee compensation in organizations; including job evaluation systems, legal issues, comparable worth, rewards as a consideration in motivation and satisfaction, wage levels and structures, merit ratings, individual and group incentives and benefit plans.

Prerequisite: Graduate classification.**MGMT 624 Seminar in Human Resources****Credits 3. 3 Other Hours.**

Seminar on theory and research in human resource management; includes: planning, search and decision theory, organizational entry and socialization, staffing theories, validity generalization, utility theory, performance measurement and evaluation, reward systems, organizational justice and employee rights, employee development and employee withdrawal.

Prerequisite: Doctoral classification or approval of instructor.**MGMT 625 Human Resource Development****Credits 3. 3 Lecture Hours.**

Examination of training, education and development within organizations from both a strategic and operational perspective; analysis of needs, program design and methods, program implementation and evaluation, including transfer or learning issues; legal and ethical human resource development issues; implications and practices of human resource development for enhancing global competitiveness.

Prerequisite: Graduate classification.**MGMT 626 Teams in Organizations****Credits 3. 3 Lecture Hours.**

Cutting edge thinking on leading in team-based organizations including the organizational changes required to move to a team-based structure and the organizational factors required to create successful work teams.

Prerequisite: Graduate classification.**MGMT 627 Talent Management****Credits 3. 3 Lecture Hours.**

Understanding the role of talent management in careers; procedures for talent management to drive organizational success for HRM; identify, analyze and apply evidence-based approaches for developing leadership talent; leadership problem analysis.

Prerequisite: Graduate classification.**MGMT 628 Contemporary Human Resource Management Issues****Credits 3. 3 Lecture Hours.**

Application of human resource theory to contemporary human resource management issues; impact of these issues for the organization and on the strategic role of the human resource professional; guest speakers; student projects.

Prerequisite: Second-year enrollment in the Master of Science in management program or approval of instructor.**MGMT 629 Financial Analysis Modeling in HR****Credits 3. 3 Lecture Hours.**

Direct financial analysis techniques in context of HRM professionals; define, identify, and analyze common financial statement reports; apply financial concepts into HR operational decision making; business application modeling; Microsoft Excel functionality.

Prerequisite: Graduate classification.**MGMT 630 Behavior in Organizations****Credits 3. 3 Lecture Hours.**

Organizational behavior theory, research and applications; focuses on the individual and group levels of analysis; includes: learning principles, perceptions, attitudes and job satisfaction, work motivation, job design, group properties and processes, leadership, conflict, communication, personality influences on work attitudes and behaviors, work-life issues and job stress.

Prerequisite: Graduate classification.**MGMT 632 Technology Commercialization****Credits 3. 3 Lecture Hours.**

Focus on technology, process of evaluating raw technology viability, converting raw technology into commercially viable products and services; includes model on Small Business Innovation Research (SBIR) grant program; develops competencies skills to evaluate technology's commercial viability; brings viable technologies to commercial success.

Prerequisite: Graduate classification.**MGMT 633 Organizational Change and Development****Credits 3. 3 Lecture Hours.**

Organizational change theory, processes and models; the role of change agents; organizational diagnosis and intervention; culture, process, strategy, structure and technology changes in organizations; evaluation research on organizational change; problems and issues in organizational change.

Prerequisite: Graduate classification.**MGMT 634 Seminar In Organizational Behavior****Credits 3. 3 Other Hours.**

Theory and research in organizational behavior; includes: operant and social learning theories, work motivation, job satisfaction and affect at work, task design, absenteeism and turnover, prosocial behavior, leadership, group properties and processes and work linkages and job stress.

Prerequisites: MGMT 630 or equivalent; doctoral classification or approval of instructor.

MGMT 635 Employment Regulation**Credits 3. 3 Lecture Hours.**

Overview of regulatory environment of human resource management; topics include: equal employment opportunity and affirmative action, benefits regulation, workplace safety, workers' compensation, labor relations, and international aspects of employment regulation.

Prerequisite: Graduate classification.**MGMT 636 Seminar in Organization Theory****Credits 3. 3 Lecture Hours.**

Research literature in organization theory focusing on major theoretical perspectives and content areas; includes: design of organizational structure and control systems; analysis of organization-environment relations, including interorganizational relationships; managing organizational technology and innovation; information processing and decision making; and organizational culture, conflict and power.

Prerequisite: Doctoral classification or approval of instructor.**MGMT 637 Foundations of Entrepreneurship****Credits 3. 3 Lecture Hours.**

Process of launching a new venture; process by which opportunities can be discovered and selected; attributes of entrepreneurs and new venture teams; process of developing business plan; core entrepreneurial strategies—business level, organizational design, marketing, financial; strives to develop competencies, concepts, operational tools relevant to creating, implementing new ventures.

Prerequisite: Graduate classification.**MGMT 638 Strategic Entrepreneurship****Credits 1 to 3. 1 to 3 Lecture Hours.**

Emphasis on a firm's need to be both entrepreneurial (identifying opportunities in the market) and strategic (taking actions to gain a competitive advantage) in order to create value for stakeholders; includes: developing an entrepreneurial mindset; building an entrepreneurial culture; managing resources (building a resource portfolio, bundling resources to create capabilities and leveraging the capabilities to exploit the opportunities identified); creating innovations.

Prerequisite: Graduate classification.**MGMT 639 Negotiations in Competitive Environments****Credits 1 to 3. 1 to 3 Lecture Hours.**

Understanding prescriptive and descriptive negotiation theory as it applies to dyadic and multi-party negotiations, to buyer-seller transactions, dispute resolution, development of negotiation strategy and management of integrative and distributive aspects of the negotiation process.

Prerequisite: Graduate classification.**MGMT 640 Managing for Creativity and Innovation****Credits 3. 3 Lecture Hours.**

Examines factors that may foster or stifle individual, team, or organizational creative performance, and presents techniques that may improve the student's creative thinking skills.

Prerequisite: Graduate classification.**MGMT 643 Foundations of Managerial Law****Credits 3. 3 Lecture Hours.**

Basic legal relationships and issues encountered by managers and organizations; American legal system, administrative law, alternative dispute resolution and selected substantive areas of law (e.g., environmental protection, discrimination, negotiable instruments).

Prerequisite: Graduate classification.**MGMT 645 Legal and Ethical Issues in Business****Credits 1 to 3. 1 to 3 Lecture Hours.**

An overview of legal compliance programs, business ethics and social responsibility issues.

Prerequisite: Approval of instructor.**MGMT 650 Human Relations and Collective Bargaining in Industry****Credits 3. 3 Lecture Hours.**

Labor management relationship and human relations problems encountered during union administration; labor history; basic construction of the National Labor Relations Act; alternative dispute resolution; contemporary labor relations issues; international labor relations issues.

Prerequisite: Graduate classification.**MGMT 655 Survey of Management****Credits 3. 3 Lecture Hours.**

Management concepts and applications important to managers in all types and sizes of organizations; includes: strategic planning, goal setting, control and managerial ethics; decision making, organizing, human resource management, including staffing, performance appraisal and compensation; leadership, motivation, communication and group processes; achieving organizational quality and managing in a global environment.

Prerequisite: Graduate classification; may not be used for elective credit by a master's candidate in business administration.**MGMT 657 Entrepreneurship: The Lean Startup Approach****Credits 3. 3 Lecture Hours.**

Application of current lean startup methodologies working directly with existing student entrepreneurs and mentors in preparing for the launch of a real business at the student incubator (Startup Aggieland); act as advocates and consultants assisting with organizational structure, marketing and market validation, financial analysis and risk assessment.

Prerequisites: Graduate classification and approval of instructor.**MGMT 658 Managing Projects****Credits 3. 3 Lecture Hours.**

Application of management processes to complex interdisciplinary organizational environments through the study of program and project management; adoptions of traditional management theories to the project environment; master typical project management microcomputer software for project planning; resource allocation; project budgeting; and control of project cost, schedule and performance.

Prerequisite: Graduate classification.**MGMT 660 Global Human Resource Management****Credits 3. 3 Lecture Hours.**

Examine HRM in a global context; emphasis given to global HR functions such as international staffing, training, and compensation; focus on global HRM trends and challenges; addresses issues and choices HR managers face in multinational enterprises.

Prerequisite: Graduate classification.**MGMT 663 International Transfer Pricing****Credits 3. 3 Lecture Hours.**

Valuation of cross-border transactions between units of a multinational enterprise; includes internal and external motivations for transfer pricing, managerial and economic approaches; estimates of transfer manipulation, arm's length standard, U.S. and OECD rules and procedures, tax court cases and ethical dilemmas.

Prerequisite: Graduate classification; enrolled in the 5-Year BS/MS in Economics program; or approval of instructor.**Cross Listing:** ECON 663 and INTA 663.

MGMT 667 Multinational Enterprises**Credits 3. 3 Lecture Hours.**

Graduate seminar in international business; multinational enterprises (MNEs) are studied from various perspectives including economics, management, entry and expansion strategies, contractual agreements, transfer pricing, impacts on home and host countries, MNE-state relations, regional integration, public policies towards MNEs.

Prerequisite: Graduate classification.**Cross Listing:** IBUS 667 and INTA 629.**MGMT 673 Advanced Research Methods in Management****Credits 3. 3 Lecture Hours.**

Introduces PhD students in Management to the multivariate methods commonly used in management research. Applications emphasized; journal publications; projects and critiques required.

Prerequisite: STAT 608.**MGMT 674/BICH 679 Building Scientific Relationships****Credit 1. 1 Lecture Hour.**

Addressing aspects of human element of scientific research; emotional and cultural intelligence, resiliency, team dynamics, leadership, effective communication with others, strategies for conflict resolution and best practices for mentoring undergraduates.

Prerequisites: Successful completion of one year of graduate study and affiliation with a research laboratory in the life sciences.**Cross Listing:** BICH 679/MGMT 674.**MGMT 675 Leadership in Organizations****Credits 1 to 3. 1 to 3 Lecture Hours.**

Review of research on procedures, styles and methods of leadership, supervision, management and administration; all aspects of leader role behavior, both in practice and in research; areas in need of further research. May be repeated for up to 3 hours credit.

Prerequisite: Graduate classification.**MGMT 676 Strategic Management Survey****Credits 3. 3 Lecture Hours.**

Management concepts and applications important to strategy; includes: concept of strategy; the environment, and performance; the role of top management teams; business-level strategies; competitive strategy and dynamics; corporate strategy formulation and implementation; mergers; acquisitions; governance and control systems; international strategies; cooperative strategies; technology strategies; corporate entrepreneurship.

Prerequisite: Doctoral classification or approval of instructor.**MGMT 677 Strategy Implementation****Credits 3. 3 Lecture Hours.**

Concepts, research and applications regarding issues central to strategy implementation; includes: the nature of managerial work; inertia, organizational change and adaptation; innovation; strategic leadership; power; top management teams in implementation roles; organizational cultures; the relationship between strategy and structure; executive succession; institutional contexts; governance; agency theory; boards of directors; executive compensation; use of leverage and cash flow; implementation of mergers, acquisitions, and restructuring.

Prerequisite: Doctoral classification or approval of instructor.**MGMT 678/IBUS 678 International Management****Credits 3. 3 Lecture Hours.**

Survey of the issues, problems, challenges and opportunities facing organizations competing in a global economy; includes: the environment of international management, international strategies, forms of organization design used by multinational firms, managing human resources in an international context, and cultural and control issues facing the international manager.

Prerequisite: Graduate classification.**Cross Listing:** IBUS 678/MGMT 678.**MGMT 679/IBUS 679 International Business Policy****Credits 2 to 3. 2 to 3 Lecture Hours.**

Determinants of U.S. competitiveness in international markets; the international environment of business; introduction to multinational enterprises, global competition, international organizations, protection of intellectual property; international trade regulation; strategic trade theory.

Prerequisite: Graduate classification.**Cross Listing:** IBUS 679/MGMT 679.**MGMT 680 Business and Corporate Strategy****Credits 3. 3 Lecture Hours.**

The nature of strategy and its relationship with performance. Business level strategies, including: product and cost differentiation, cooperation, and imitation impeding strategies. Corporate level strategies, including: diversification, mergers and acquisitions, innovation and market share. Case analyses emphasized.

Prerequisite: Graduate classification.**MGMT 681 Seminar****Credit 1. 1 Lecture Hour.**

Critical examination of subject matter presented in current journals, monographs and bulletins in field of management. Classification 6 students may not enroll in this course.

Prerequisite: Graduate classification.**MGMT 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

Directed internship in an organization to provide students with on-the-job training with professionals in organizational settings appropriate to the students' professional objectives. Classification 6 students may not enroll in this course.

Prerequisites: Approval of MS program coordinator and department head.**MGMT 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Directed study on selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisites: Graduate classification and approval of instructor.**MGMT 686 Research Methods in Organizational Science II****Credits 3. 3 Lecture Hours.**

Continuation of topics introduced in Management 687; additional topics include survey research methodology, quantitative and qualitative field methods; archival data collection; measurement and methods across time; issues in peer review and publication.

Prerequisites: Doctoral classification and MGMT 687 or approval of instructor.

MGMT 687 Research Methods in Organizational Science I
Credits 3. 3 Lecture Hours.

Philosophy of science, theory development; survey of research methodology applicable to the study of organizational phenomena; research strategy and design; measurement and sampling issues; data collection methods; problems and issues in organizational research.

Prerequisites: Doctoral classification or approval of instructor; STAT 651 or equivalent.

MGMT 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.

Selected topics in an identified area of management. May be repeated for credit.

Prerequisite: Graduate classification.

MGMT 690 Theory of Research in Management

Credits 3. 3 Lecture Hours.

Research practicum; application of research methodology learned in MGMT 687; advanced readings in research methods; fundamental skills and concepts needed to design and conduct dissertation research. Classification 6 students may not enroll in this course.

Prerequisites: Doctoral classification or approval of instructor; MGMT 687 or equivalent.

MGMT 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research for thesis or dissertation. Classification 6 students may not enroll in this course.

Prerequisite: Graduate classification.

MGMT 705 Strategic Human Capital

Credits 1 to 4. 1 to 4 Lecture Hours.

Human resource management (HRM); staffing, performance management, work and job design; training; compensation and labor relations; employee engagement; applying human capital strategies to accomplish business objectives.

Prerequisite: For Master of Science in Business students only.

MGMT 710 Crafting Business Strategy

Credits 1 to 4. 1 to 4 Lecture Hours.

Analysis, decisions and actions taken by companies to create sustainable competitive advantages; environment, competitor and stakeholder analysis; strategy formulation; strategy implementation and control; corporate governance; diversification; mergers and acquisitions; innovation and market share; nature of strategy and its relationship with performance.

Prerequisite: For Master of Science in Business students only.

MHUM - Humanities In Medicine

MHUM 601 Medical Spanish I - Novice to Beginner

Credits 1.25 to 10. 1.25 to 10 Lecture Hours.

25 to 10. Introduction to the basic knowledge of medical Spanish; use of vocabulary and interactive cases to enhance communication skills with Spanish-speaking patients, their families, other health care providers and society; introduction and development of the linguistic and cultural skills necessary to facilitate basic communication and negotiate a number of primary difficulties posed by an English-Spanish language barrier between patients and providers. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Admission to Medical School.

MHUM 602 Medical Spanish II – Beginner to Moderate

Credits 1.25 to 10. 1.25 to 10 Other Hours.

25 to 10. Builds on the introduction of basic knowledge of medical Spanish described in the syllabus for Medical Spanish II; use of vocabulary and interactive cases to enhance improved communication skills with Spanish-speaking patients, their families, other health care providers and society. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Admission to Medical School.

MHUM 603 Medical Spanish III – Moderate to Advanced

Credits 1.25 to 10. 1.25 to 10 Other Hours.

25 to 10. Detailed and specific components of the history and physical examination, review of systems, social and family history, utilization of laboratory and other diagnostic testing; communication of assessments and plans to the patient and their family; effectively utilize and command expertise in cultural competency benefiting the patient and society. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Admission to Medical School.

MHUM 604 Medical Spanish IV – Advanced

Credits 1.25 to 10. 1.25 to 10 Other Hours.

25 to 10. Refine and demonstrate abilities in discussing sensitive subjects, such as psychosocial, mental health, sexuality, end of life care and other topics in culturally competent ways; mentor patients, families, health care providers, students and society. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Admission to Medical School.

MHUM 801 Practical Medical Law and Ethics for Physicians

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Enhance each participant's knowledge of state and federal laws that affect physicians' medical practice. Topics include malpractice, consent, confidentiality, HIPAA compliance, business entities, contracts and regulatory matters. Expose students to the legal issues, responsibilities and expectations associated with physicians in various practice settings. Examine legal and ethical issues that arise in the normal course of medical practice, hospital privileges and committee service.

MHUM 802 Directed Research in History of Medicine

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Offered in London. Explore firsthand an area of individual interest or specialty in history medicine; further student understanding of the relevance of medical history to contemporary clinical practice and biomedical ethics; enhance student international awareness of medical practice in a different cultural setting (London, England) with no language barrier; broaden student perspective by exposure to the rich medical as well as cultural and artistic heritage in London, UK; and provide experience in interpretation, communication, and evaluation of a medical subject in its proper historical context, which may be submitted for publication.

MHUM 803 Medical Humanities Directed Research

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Explore a specific area of individual interest and gain knowledge by discovery, which may also be relevant to their future residency; sharpen students' analytic and communication skills and critical judgment in developing a coherent thesis out of their area of interest; broaden student understanding of the medical profession, clinical practice and physician-patient relations through the insights provided by the humanities disciplines; increase student understanding of how cultural, psychological and other non-medical factors affect clinical practice; stimulate curiosity, questioning of assumptions and accepted notions, tolerance of differing values; and encourage self-reflection and lifelong learning to balance stresses of professional life.

MHUM 804 Medical Education**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Analyze current Phase I and Phase II courses for content, delivery, opportunities for improvement; apply information learned from course analysis to development of curricular improvement project; help produce student reports for LCME; demonstrate clinical teaching skills with M3 students during clerkships, and simulation classes; and develop one innovation for use during Phase I, II, or III of the curriculum.

MHUM 805 Public Affairs Intern – TMA**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Public Affairs Elective at Texas Medical Association in Austin. This provides the learner the opportunity to experience health policy creation and implementation in Texas through the work of the Advocacy Division of the Texas Medical Association. When the Texas Legislature is in session, the experience includes legislative hearings and passage of laws. When the Legislature is not in session, the experience will be with the regulatory agencies and how they implement the laws.

MHUM 806 Palliative Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The faculty will strive to provide basic information on interdisciplinary approach to palliative and end-of-life care; teach skills needed to improve communication with patients with chronic or terminal diseases and appropriate methods of delivering bad news; provide basic information on pain assessment and management; and demonstrate comprehensive nature of end-of-life care, the distinctive nature of its patient care model, and its significant place in today's healthcare arena.

MHUM 807 Fellowships in Leadership**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Experience in leadership; learn from and develop a professional relationship with a leader. The leader serves as a role model, offering students an opportunity to share his or her professional life.

MHUM 808 Medical History and Humanities**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Historical aspects of medicine and how the humanities are integrated into medical education and patient care. Sessions will be devoted to interactive discussions using role models and key historical events. Values, their role in guiding our behavior, our interpretations of others, and the way we make sense of the world in general, will be considered. Sacred Vocation, one path to promoting the art of medicine, is an evidence-based complement to the science of medicine. Sessions focusing on this approach will include the following: what gives meaning to life, exploring the power to heal or harm, and creating coping mechanisms for dealing with difficult work situations.

MHUM 809 Healthcare Administration**Credits 1.25 to 10.**

This course will introduce the student to the administrative aspects of health care delivery. The student will gain experience with the medical staff appointment and reappointment process; peer review process; physician health and wellness; hospital policy and procedure rationale, development and implementation; health information management, including electronic medical records; health care financing; health care expense allocation; third-party pay or systems, including alternative options such as accountable care organization; and various regulatory and compliance agencies, including The Joint Commission, Centers for Medicare and Medicaid Services, and Texas Department of State Health Services. The student will also gain experience with various internal and external health care improvement initiatives, patient safety projects, and issues related to institutional risk management.

MHUM 810 Self and Culture**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Exploration of ideas about culture and its role in Medicine. Culture has many implications and could never be defined in a one to three week elective, so our goal is to assist students in understanding the importance of broad culture and help them understand their own perceptions and how they apply it to their role as a physician. This elective aims to promote self-awareness to enhance professional understanding and compassion for everyone.

MHUM 811 Practical Medical Law and Ethics**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Examines the ethical responsibilities of and issues for physicians in complex patient care delivery systems and considers the moral and ethical dimensions of professional life.

MHUM 812 Lead in Medical Program: Healthcare Delivery and Financing**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Daily operations of a community health plan; provide resources in review of healthcare delivery and financing; provide guidance to selection of topic of investigation; and serve as mentor for production of scholarly paper for peer-reviewed publication.

MHUM 815 Essentials of Leadership**Credits 1 to 15. 1 to 15 Other Hours.**

Four-week elective; familiarization with the basics of leadership and its application in the field of medicine; focus on improving interpersonal communication/teamwork, understanding the business of medicine and expanding on knowledge of systems-based care and advocacy.

Prerequisite: Admission to medical school.**MHUM 819 Medical Foreign Language and Cultural Competency****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Improvement of foreign language communication skills for the purpose of caring for patients and their families in a clinical setting. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Admission to Medical School.**MHUM 985 Off Campus Student Initiated Elective****Credits 1 to 10. 1 to 10 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MHUM 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Humanities in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

MICR - Microbiology

MICR 681 Seminar**Credit 1. 1 Other Hour.**

Detailed reports on specific topics in field chosen. Students may register in up to but no more than three sections of this course in the same semester.

MICR 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Limited investigations in fields other than those chosen for thesis or dissertation.

MICR 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of microbiology.

MICR 691 Research**Credits 1 to 12. 1 to 12 Other Hours.**

Research for thesis or dissertation.

MKTG - Marketing

MKTG 613 Marketing Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Core MBA marketing class examines history of marketing, environment that impacts marketing decisions of firms and consumers, buyer behavior, marketing ethics, marketing research, market segmentation, product positioning, new product management, and strategic challenges associated with integrating major marketing mix decision elements; product, price, distribution, and promotion. May be repeated for up to 3 hours of credit. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment is limited to BUAD classification 7.**MKTG 621 Survey of Marketing****Credits 3. 3 Lecture Hours.**

Marketing concepts and decisions associated with developing marketing strategies; topics include product, pricing, distribution, and promotion.

Note: Course may not be used for elective credit by a master's candidate in business administration.

MKTG 625 Marketing Analytics I**Credits 3. 3 Lecture Hours.**

Analysis and management of popular statistical packages for the purpose of enhanced data-based and empirically-driven marketing decisions; using and executing data analytic techniques, and case studies to understand how to solve marketing analytic problems in a scientific and process-driven manner.

Prerequisite: MKTG 621 or equivalent.**MKTG 626 Marketing Analytics II****Credits 3. 3 Lecture Hours.**

Advanced analysis and management of popular statistical packages with a focus on large data sets and marketing decision-making.

Prerequisite: MKTG 625.**MKTG 630 Marketing Analytics and Consulting****Credits 3. 3 Lecture Hours.**

Application of marketing analytics knowledge through the planning and execution of marketing analytics projects for businesses.

Prerequisite: MKTG 625.**MKTG 635 Marketing Analytics and Pricing****Credits 3. 3 Lecture Hours.**

Advanced quantitative techniques and analytical tools that provide insights into the nature of consumer demand and its response to changes in the marketing mix, with a focus on pricing.

Prerequisite: MKTG 625.**MKTG 638 Strategic Foundations of E-Commerce****Credits 3. 3 Lecture Hours.**

Implications of increasing electronic interactivity between consumers and firms; migration of products to the electronic marketplace and its effects on the marketing channel; Internet's impact on marketing mix decisions; competitive advantage; public policy issues.

Prerequisite: MKTG 613 or MKTG 621 or equivalent.**MKTG 650 Analyzing Consumer Behavior****Credits 3. 3 Lecture Hours.**

Concepts, theories, and techniques applicable to obtaining a sophisticated and empirically-based understanding of consumer motivation, attitudes, decision-making processes, and responses to marketers' actions; application of consumer psychology and behavioral decision making to managerial and public policy insights.

Prerequisite: MKTG 613 or MKTG 621 or equivalent.**MKTG 656 Branding and Marketing Communication****Credits 3. 3 Lecture Hours.**

Customer-based brand equity and positioning, brand objectives, communication processes, customer decision stages, creative and media strategies including traditional, grassroots, and social media, measuring advertising effectiveness and return on marketing investment.

Prerequisite: MKTG 613 or MKTG 621 or equivalent.**MKTG 660 Marketing Consulting****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Application of marketing knowledge through the planning and execution of marketing projects for businesses. May be repeated one time for credit.

Prerequisite: MKTG 621 or equivalent.**MKTG 665 Research for Marketing Decisions****Credits 3. 3 Lecture Hours.**

Methodology for generating and using information related to problems in marketing decision-making; primary and secondary research methodology and analytical techniques; guidelines for designing and conducting research projects. Classification 6 students may not enroll in this course.

Prerequisites: MKTG 613 or MKTG 621 or equivalent; basic statistics course.**MKTG 670 Marketing Leadership****Credits 1 to 3. 1 to 3 Lecture Hours.**

Seminar on the application of marketing concepts and theories through guest lectures and discussions with marketing-thought leaders in business and academia. May be taken two times for credit.

Prerequisite: MKTG 621 or equivalent.**MKTG 671 Product Innovation****Credits 3. 3 Lecture Hours.**

Strategy and management of the new product development process, portfolio management and innovation charters for new products; topics include creativity, trade-off analysis, concept testing, design and launch. Classification 6 students may not enroll in this course.

Prerequisite: MKTG 613 or MKTG 621 or equivalent.**MKTG 673 Services Marketing****Credits 3. 3 Lecture Hours.**

Marketing concepts and strategy as applied to service organizations, unique characteristics of services, marketing challenges posed by those characteristics and ways to meet those challenges effectively. Special emphasis on service quality. Classification 6 students may not enroll in this course.

Prerequisite: MKTG 613 or MKTG 621 or equivalent, or approval of instructor.

MKTG 675 Marketing Strategy**Credits 1 to 3. 1 to 3 Lecture Hours.**

Marketing management as it relates to overall organizational goals: marketing strategy concepts and interdependencies with strategy at the corporate and business unit levels and in other functional areas; impact of digital technologies and environmental sustainability on marketing strategy. Classification 6 students may not enroll in this course.

Prerequisites: MKTG 613 or MKTG 621 or equivalent; graduate classification in business administration.

MKTG 677/IBUS 677 Multinational Marketing Management**Credits 3. 3 Lecture Hours.**

Theoretical and empirical materials on multinational marketing; nature and justification of international trade, analysis of environments faced by multinational firms and formulation of multinational marketing strategy. Classification 6 students may not enroll in this course.

Prerequisite: MKTG 613 or MKTG 621 or equivalent.

Cross Listing: IBUS 677/MKTG 677.

MKTG 680 Seminar in Buyer Behavior**Credits 3. 3 Lecture Hours.**

Detailed examination of the literature in consumer and industrial buyer behavior with emphasis on conceptual and empirical issues; critical analysis of buyer behavior theory. Classification 6 students may not enroll in this course.

Prerequisites: MKTG 650 or equivalent; doctoral classification.

MKTG 682 Seminar in Marketing Strategy Research**Credits 3. 3 Lecture Hours.**

Review of research on marketing strategy content; formulation process and implementation related issues; includes antecedents, outcomes, mediators and moderators of the relationship between marketing strategy and performance; strategic marketing alliances; market pioneering; multimarket competition; global competitive strategy; interdependencies between marketing, business and corporate strategy. Classification 6 students may not enroll in this course.

Prerequisite: Doctoral classification.

MKTG 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Directed internship in an organization to provide students with on-the-job training with professionals in organizational settings appropriate to the students' professional objectives. Classification 6 students may not enroll in this course.

Prerequisite: Approval of committee chair and department head.

MKTG 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed study of selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.

MKTG 687 Seminar in Marketing Models**Credits 3. 3 Lecture Hours.**

Review and discussion of the foundations of modeling and recent developments in research using marketing models. The seminar is designed to provide participants with new ways to think about modeling marketing phenomena and enable them to generate new ideas, research topics, and modeling applications for marketing problems.

Prerequisite: Doctoral classification.

MKTG 688 Doctoral Seminar**Credits 3. 3 Other Hours.**

Historical development of the conceptual framework of marketing theory and practices; analysis of current research and controversial issues in the field. May be repeated for credit three times. Students may take up to two sections of this course in the same semester. Classification 6 students may not enroll in this course.

Prerequisite: Doctoral classification.

MKTG 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of marketing. Classification 6 students may not enroll in this course. May be repeated for credit.

MKTG 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. Classification 6 students may not enroll in this course.

MKTG 705 Market and Customer Insights**Credits 1 to 4. 1 to 4 Lecture Hours.**

Strategic challenges in understanding customers, both in consumer and business markets; customer decision-making, buyer behavior, market segmentation, marketing environment and marketing research.

Prerequisite: For Master of Science in Business students only.

MKTG 710 Strategic Marketing Decisions**Credits 1 to 4. 1 to 4 Lecture Hours.**

Key decisions made by marketing managers; development and management of goods and services; product position; pricing of offerings; managing brand portfolios and communication strategies; structuring and managing channels of distribution.

Prerequisite: For Master of Science in Business students only.

MMET - Mfg & Mech Engr Tech

MMET 610 Cyber-Enabled Manufacturing**Credits 3. 3 Lecture Hours.**

Theory and technologies related to integrating humans, smart-machines and information within a connected networked manufacturing environment; technologies including sensors and sensor networks; Internet of Things and Industry 4.0 concepts; topics include total quality control, sensor fusion, analytic modeling and adaptive control algorithms.

Prerequisites: Graduate classification or approval of instructor.

MMET 612 Manufacturing Supply-Chain Capability Management**Credits 3. 3 Lecture Hours.**

Supply chain operations, associated business processes and their relation to the financial performance of a manufacturing company; methodologies for the optimal use of company assets and resources to achieve coordinated of material flows between and within suppliers, manufacturers and distributors.

Prerequisites: Graduate classification or approval of instructor.

MMET 629 Technical Project and Personnel Supervision**Credits 3. 3 Lecture Hours.**

Techniques and methods for effective project and personnel management; legal aspects of projects including labor laws, unions, safety and reporting; globalization and impact on project management; financial justification and cost accounting of project budgets; leadership and management skills; engineering and technology supervision.

Prerequisites: Graduate classification or approval of instructor.

MMET 641 Data Analysis, Simulation and Experimental Methods for Industry**Credits 3. 3 Lecture Hours.**

Parametrize and simulate physical systems; use of successive substitution technique for system modeling and optimization purposes; optimization techniques including calculus-based search methods; experimental methods for industry applications will include two-level factorial experimental design; multivariable data fitting and error propagation analysis.

Prerequisites: STAT 601; graduate classification or approval of instructor.**MMET 651 Advanced Materials Technology****Credits 3. 3 Lecture Hours.**

Concepts, properties and behavior of common traditional and non-traditional materials; mechanical behavior including fracture, fatigue and creep; electrical, thermal, magnetic, optical properties; degradation of material systems; material testing and characterization using commonly established tools and procedures; material selection for specific applications.

Prerequisites: Graduate classification or approval of instructor.**MMET 652 Advanced Manufacturing Technology****Credits 3. 3 Lecture Hours.**

Advanced manufacturing practice in industry; principles and applications of 3D printing, particulate materials processing, microfabrication and high energy beam materials processing.

Prerequisites: MMET 181; MMET 206; MMET 207, or approval of instructor; graduate classification.**MMET 661 Product and System Lifecycle Management****Credits 3. 3 Lecture Hours.**

Aspects of product and system design presented in a lifecycle context; emphasis on systems engineering, product development and lifecycle management concepts; decision making tools, economic and environmental assessment methods presented and used to evaluate engineered products and systems.

Prerequisites: Graduate classification or approval of instructor.**MMET 681 Seminar****Credit 1. 1 Other Hour.**

Selected topics presented by the faculty, students and outside speakers.

Prerequisites: Graduate classification or approval of instructor.**MMET 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Directed study of topics not within scope of thesis research and not covered by other formal courses. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.**MMET 689 Special Topics In...****Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of engineering technology. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.**MMET 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.**MMET 692 Professional Study****Credits 1 to 23. 1 to 23 Other Hours.**

Approved professional study of project.

Prerequisites: Approval of instructor.

MPAT - Pathology & Lab Medicin

MPAT 801 Anatomic and Clinical Pathology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective course will serve to familiarize the student with the organization and clinical activity of Anatomic and Clinical Pathology. The course will reinforce the students' knowledge in anatomy, histology, and basic Anatomic Pathology. The student will be introduced to the principles of diagnosis in surgical biopsies, surgical resections, cytology material, and post-mortem examinations. The elective will acquaint the student with the clinical laboratory and methodologies of procedures, their interpretation, and their application of patient management in areas of blood bank, microbiology, specimen handling, forensic toxicology, hematology, body fluids, chemistry, and immunology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**MPAT 802 Anatomic and Clinical Pathology****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective course will serve to familiarize the student with the organization and clinical activity of Anatomic and Clinical Pathology. The course will reinforce the students' knowledge in anatomy, histology, and basic Anatomic Pathology. The student will be introduced to the principles of diagnosis in surgical biopsies, surgical resections, cytology material, and post-mortem examinations. The elective will acquaint the student with the clinical laboratory and methodologies of procedures, their interpretation, and their application of patient management in areas of blood bank, microbiology, specimen handling, forensic toxicology, hematology, body fluids, chemistry, and immunology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**MPAT 803 Anatomic and Clinical Pathology****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective course will serve to familiarize the student with the organization and clinical activity of Anatomic and Clinical Pathology. The course will reinforce the students' knowledge in anatomy, histology, and basic Anatomic Pathology. The student will be introduced to the principles of diagnosis in surgical biopsies, surgical resections, cytology material, and post-mortem examinations. The elective will acquaint the student with the clinical laboratory and methodologies of procedures, their interpretation, and their application of patient management in areas of blood bank, microbiology, specimen handling, forensic toxicology, hematology, body fluids, chemistry, and immunology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.**MPAT 804 Anatomic and Clinical Pathology****Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective course will serve to familiarize the student with the organization and clinical activity of Anatomic and Clinical Pathology. The course will reinforce the students' knowledge in anatomy, histology, and basic Anatomic Pathology. The student will be introduced to the principles of diagnosis in surgical biopsies, surgical resections, cytology material, and post-mortem examinations. The elective will acquaint the student with the clinical laboratory and methodologies of procedures, their interpretation, and their application of patient management in areas of blood bank, microbiology, specimen handling, forensic toxicology, hematology, body fluids, chemistry, and immunology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPAT 985 Off Campus Student Initiated Elective**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MPAT 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Pathology in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

MPED - Pediatrics

MPED 800 Pediatrics Clerkship**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

25 to 15. Introductory experience in the practice of pediatrics.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPED 801 Primary Pediatric Care in the Community Setting**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The faculty will strive to provide the medical student with an educational experience in the primary community setting which gives comprehensive clinical care to patients of the pediatric age group, newborn-18 years; enable the student to broaden his educational base in well child care and in recognition and management of acute and chronic pediatric conditions/diseases in ambulatory and inpatient settings; and provide the student with broader exposure to the practice of pediatrics and its linkage to Scott and White, Temple Campus as a tertiary care provider.

MPED 802 Neonatal Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The course will provide support and experience necessary for transition from basic understanding of common pediatric problems to assumption of primary patient care. The student will be encouraged to refine his/her neonatal skills and knowledge and introduce them to appropriate use of specialty and sub-specialty consultation. The course will also encourage further development of skills needed to define, locate, and evaluate valuable sources of information dealing with various aspects of neonatal knowledge. Night Call is required, and housing is not provided.

MPED 803 Neonatal Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

While working in the NICU, the student will develop skills in the assessment, stabilization, diagnosis, and management of critically ill term and premature newborn infants. Throughout this elective, students are immersed in both didactics as well as patient care. Students take patients in rotation with the other trainees and he/she is also responsible for patient evaluation, examination and management. Along with this goes the responsibility of reading in depth about the patients and their problems, checking on lab work, seeing them each day and for adequate documentation in each medical record. The student is responsible for supervised communication with the families of babies assigned to him/her as well as participation in parent education regarding their newborn. There is a variety of weekly conferences and activities to take part in, including morning rounds, high risk deliveries, morning report, observation of neonatal ante partum consultations and neonatal resuscitation programs as well as multiple topic-specific conferences. A PICO assignment is required throughout the course as well as delivering case presentation regarding cases that are selected by faculty.

MPED 804 Pediatric Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Distinguish normal from abnormal cardiovascular signs and symptoms; teach importance of recognizing and managing, if necessary refer, the cardiac conditions in children.

MPED 805 Child Neurology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

All aspects of the practice of Child Neurology. Demonstrate accurate history and physical assessment skills as pertains to neurological problems in children. Provide daily brief discussions on a clinical neurology topic. Make learning resources readily available to the student; model problem solving approaches to neurologic complaints in children.

MPED 806 Pediatric Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Acquaint the student to pediatric critical care medicine. Explain the rationale for initial treatment of critically ill pediatric patients with common disease process.

MPED 807 Infectious Disease**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Provide an environment conducive to learning. Offer a logical approach to the most common pediatric infectious disease problems. Provide guidance for the student to find appropriate literature pertaining to the patients followed by the service.

MPED 808 Cardiovascular Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Expose student to surgical correction of congenital heart defects (CHD); Instruct in the anatomy, physiology and pathology of CHD; Preoperative evaluation of CHD patient and Postoperative care of CHD patient.

MPED 809 Pediatric Diabetes Camp**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Learn first-hand diabetes management through an intense exposure to children and adolescents with diabetes mellitus and to enable the student to observe common childhood problems and illnesses in a residential camp setting.

MPED 810 Pediatric Emergency Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Exercise clinical thinking and develop differential diagnosis, management and disposition for pediatric patients presenting with medical illness; comprehensive clinical experience in acute management of various urgent care concerns for pediatric patients, initial treatment and stabilization, and management/transfer.

MPED 811 General Inpatient Pediatrics**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Learn common pediatric practices during an inpatient setting. Students must receive approval from the Elective Director for this elective.

MPED 812 Pediatric Endocrinology and Diabetes**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Learn pediatric practices with an emphasis in endocrinology and diabetes. Students must receive approval from the Elective Director for this elective.

MPED 813 Pediatric**Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

This is a 4-week elective in allergy and immunology that will provide experience in managing common adult and pediatric allergy and immunology ambulatory illness, and provide experience in managing common pediatric allergy ambulatory illnesses. It will introduce students to uncommon allergic diseases, illustrate broader aspects of pediatric care, as it relates to the care of the child with a chronic allergic condition, and encourage the student to develop skills in carefully evaluating children with allergic or immunologic problems. This elective will also introduce students to an ambulatory health care system dealing with children who have chronic illnesses and require chronic management. There is no night call during this elective, and housing is the responsibility of the student.

MPED 814 Pediatric and Adult Immunology Outpatient Care**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This is a 2- or 4-week elective in allergy and immunology that will provide experience in managing common adult and pediatric allergy and immunology ambulatory illness. It will introduce students to uncommon allergic diseases and illustrate broader aspects of adult and pediatric care, as it relates to the care of patients with chronic allergic conditions. The elective will encourage students to develop skills in carefully evaluating patients with allergic or immunological problems and introduce them to an ambulatory healthcare system dealing with patients who have chronic illnesses and require chronic management. Approximately 70% of patient encounters will be with adults and 20% with children. There is no night call during this elective, and housing is the responsibility of the student.

MPED 815 Pediatric Gastroenterology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- or 4-week elective is designed to provide the student with experience in the diagnosis and management of common problems encountered in the outpatient and inpatient practice of Pediatric Gastroenterology. Students will independently evaluate new patients in the outpatient clinic for presentation to and review by the attending physicians. Students will also follow patients admitted to the hospital and make daily rounds with the inpatient attending. The elective will also provide the opportunity to participate in Pediatric Gastroenterology endoscopic procedures. Housing is not provided, and no night call is required.

MPED 816 Pediatric Gastroenterology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Offered at Scott and White. This 2- or 4-week elective is designed to provide the student with experience in the diagnosis and management of common problems encountered in the outpatient and inpatient practice of Pediatric Gastroenterology. Students will independently evaluate new patients in the outpatient clinic for presentation to and review by the attending physicians. Students will also follow patients admitted to the hospital and make daily rounds with the inpatient attending. The elective will also provide the opportunity to participate in Pediatric Gastroenterology endoscopic procedures. Housing is not provided, and no night call is required.

MPED 817 Primary Pediatric Care in the Community Setting**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This is a 4-week elective in primary pediatric care within the community setting. It will provide the medical student with an educational experience in the primary community setting which gives comprehensive clinical care to patients of the pediatric age group, newborn - 18 years. It will enable the student to broaden his/her educational base in well child care and in recognition and management of acute and chronic pediatric conditions/diseases in ambulatory settings, as well as expose them to various pediatric education activities. There is no night call, and housing will not be provided in Round Rock.

MPED 818 Neonatal Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Through participation as an acting intern, the student will develop skills in the assessment, stabilization, diagnosis, and management of critically ill term and premature newborn infants.

MPED 819 Neonatal Intensive Care Unit - Externship**Credits 5. 5 Lecture Hours.**

Housing is the responsibility of the student. Night call will be required. The faculty will provide support and experience necessary for transition from basic understanding of common pediatric problems to assumption of primary patient care. The student will be encouraged to refine his/her neonatal knowledge and skills and further develop skills needed to define, locate, and evaluate valuable sources of information dealing with a variety of neonatal knowledge. Introduction of appropriate use of specialty and sub-specialty consultation can be expected.

MPED 820 Pediatric Gastroenterology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Broad spectrum of pediatric gastroenterology outpatient care including failure to thrive, abdominal pain, constipation, inflammatory bowel disease, cystic fibrosis, pediatric nutrition, and liver transplantation (pre- and post-operative) care; teach the indications of pediatric endoscopy including expectation of attendance to all morning and endoscopic procedures; provide both spontaneous lectures and scheduled pediatric gastroenterology lectures; and teach pediatric chronic medical care including gastrostomy tube care and attendance in both the cerebral palsy and pediatric cystic fibrosis clinic.

MPED 821 Pediatric Endocrinology and Diabetes**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Senior medical student exposure to the evaluation and management of common pediatric endocrine problems in an outpatient setting. This includes the impact of chronic illness on tasks of daily living. Both inpatient and outpatient endocrinology is covered, though the rotation is primarily outpatient.

MPED 822 Pediatric and Internal Medicine Combined Ward - Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Provide fourth year medical students with the opportunity to function as an "acting intern" in Internal Medicine and Pediatrics on general Medicine and Pediatrics service with supervision by senior residents and faculty; help prepare medical students for responsibilities and skills necessary during internship; and provide an opportunity for medical students to get a better experience in Internal Medicine and Pediatrics if they are considering Combined Internal Medicine and Pediatrics or primary care as a possible career.

MPED 823 Medical Genetics**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Enable the student to recognize patient in need of genetic services; provide an approach to evaluate patients with Genetic disease; provide students with a basic knowledge of cytogenetics and molecular medicine; and provide students with ethical dilemmas in genetics.

MPED 824 Pediatric Hematology and Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Provide an introduction to the diseases and common complications seen in the practice of Pediatric Hematology/Oncology; a reinforcement of the basic concepts regarding the pathophysiology, clinical evaluation, and management of the problems common in this practice; a familiarity to the student of proper utilization of physical assessment, laboratory, and radiologic tools in diagnosis of hematologic and oncologic childhood diseases; an introduction to the concept of cancer chemotherapy and the rationale of investigational treatment; and a strengthening of the student's ability to assess morphology of peripheral blood and bone marrow, to understand coagulation studies, and to interpret abnormalities of each.

MPED 825 Pediatric Cardiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Distinguish normal from abnormal cardiovascular signs and symptoms; importance of recognizing and managing the cardiac conditions in children; and review and discuss available catheter and interventional surgical procedures for congenital and acquired pediatric heart disease.

MPED 826 Pediatric Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Introduction to the care of critically ill children for the purposes of instructing how to approach a critically ill child with multiple problems and a primary focus on teaching the approach to these children and how to apply it to each individual case; more in-depth teaching of pediatric pulmonary management, acute pediatric cardiovascular problems, severe systemic infections, and complicated fluid management; guidance for the appropriate use of sub-specialty consultation; further experience in neuro-intensive care.

MPED 827 Pediatric Subspecialties Externship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Further the educational experience in the clinical care of pediatric subspecialties and improve the clinical acumen of students in recognizing these subspecialty problems; provide students with an experience which will enable those considering pediatrics as a career choice to further evaluate this decision; and provide students with a broad exposure to the various pediatric education activities.

MPED 828 Neonatal Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Support and experience necessary for transition from basic understanding of common pediatric problems to assumption of primary patient care; encourage students to refine his or her neonatal knowledge and skills; introduce appropriate use of specialty and sub-specialty consultation; and encourage further development of skills needed to define, locate and evaluate valuable sources of information dealing with various aspects of neonatal knowledge.

MPED 829 Pediatric Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Support and experience necessary for transition from basic understanding of common pediatric problems to assumption of primary patient care; encourage refinement of his or her pediatric knowledge and skills; introduction to appropriate use of pediatric specialty and sub-specialty consultants; encourage further development of skills needed to define and locate valuable sources of information dealing with various aspects of pediatric knowledge; introduction to management of uncommon pediatric diseases; in depth look at the specialty of pediatrics as a possible career choice.

MPED 830 Acting Internship in Pediatrics**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Function as a pediatric intern on the inpatient service at Dell Children's Hospital of Central Texas. He/she will be assigned to a team comprised of an attending physician (faculty) and a senior resident, as well as junior residents and third-year medical students. The student will be assigned patients for which he/she will have primary patient care responsibilities, with appropriate supervision. The student will have the opportunity to interact with residents, attending, subspecialists, and other members of the healthcare team.

MPED 831 Developmental - Behavioral Pediatrics**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Enhancement of skills in identifying typical from atypical development and behaviors in infants and children. The student will have the opportunity to participate with the faculty in the assessment and diagnosis of children presenting with developmental delays and/or behavioral problems. The student will encounter a wide spectrum of developmental disabilities, including Autism, Spectrum Disorders, ADHD, Language Disorders, Learning Disabilities, Intellectual Disabilities (formerly mental retardation), genetic syndromes, behavioral health disorders like anxiety and depression, among others. The student will become familiar with the role of medications in children with disabilities. The student will be assigned key reading material as part of independent study.

MPED 985 Off Campus Student Initiated Elective**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MPED 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

On-campus opportunity in the Department of Pediatrics in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

MPHY - Medical Physiology

MPHY 601 Experimental Techniques in Cell and Molecular Biology I **Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Lectures, demonstrations and hands-on laboratories focusing on both basic and advanced techniques utilized in modern biomedical research: optical, fluorescence, confocal/multiphoton, TIRF, and atomic force microscopic techniques; calcium imaging; patch-clamp; cell culture and transfection; DNA/RNA preparation; molecular cloning; RT-PCR; RNAi; protein biochemistry; Southern/northern/western blotting.

MPHY 612 Experimental Techniques in Cell and Molecular Biology II **Credits 2 to 4. 2 to 4 Lab Hours.**

This course is designed as a hands-on laboratory course to introduce the beginning graduate student to a variety of quantitative, analytical, cellular, histological, as well as ex vivo and in vivo techniques utilized in biomedical research. Information is relayed through lectures, demonstrations, and hands-on experience with the techniques discussed. The objective of this course is to help the student gain some laboratory experience and, at the same time, become familiar with basic protocols for biomedical techniques utilized in biological research.

Prerequisite: Graduate classification and approval of course coordinator.

MPHY 613 Medical Physiology I **Credits 1 to 5. 1 to 5 Lecture Hours.**

This course is a comprehensive survey of the functions of the human body: transport processes, feedback control systems and homeostasis; general structure and function of the central nervous system, electrophysiology, autonomic nervous system; musculoskeletal system; and cardiovascular system. Format includes lectures, labs, field trips, and student projects/presentations. The overall goal is for students to understand, integrate, and appreciate the numerous and complex interactions between the components of the intact system.

Prerequisite: MSCI 601 or equivalent.

MPHY 614 Medical Physiology II **Credits 1 to 5. 1 to 5 Lecture Hours.**

This course is a continuation of MPHY 613. Students will study Neurophysiology II; gastrointestinal system; respiratory system; renal/excretory system; endocrine and reproductive systems; integration of human organ systems.

Prerequisite: MPHY 613 or equivalent.

MPHY 615 Pathobiology and Therapeutics **Credits 4. 4 Lecture Hours.**

This course is designed to help students develop the ability to learn by themselves, with the oversight of a group of faculty mentors. Each student will choose a disease model system from a chosen list of diseases/model systems that affect multiple systems of the body. Students will collect and present information on how their chosen disease or integrative model system affects various organ systems. Students will put together an integrative proposal to present to the class, followed by a final written proposal.

Prerequisite: MPHY 613 and MPHY 614 or equivalent.

MPHY 616 Computational Systems Biology **Credits 4. 4 Lecture Hours.**

This course is designed as the first of a two-semester, multi-disciplinary graduate course targeted at students with an interest in computational aspects of systems biology. The course will be constructed in a modular fashion, such that either semester may be taken independently. MPHY 616 is an introduction to methods used to acquire, extract, organize, analyze, store and interpret the major types of data of interest in systems biology. It will consist of two main units: (1) exploration, analysis and interpretation of experimental data and (2) bioinformatics.

MPHY 617 Nervous System I/Musculoskeletal System **Credits 2. 2 Lecture Hours.**

This course is a separate module within the course MPHY 613.

MPHY 618 Cardiovascular System **Credits 3. 3 Lecture Hours.**

This course is a separate module within the course MPHY 613.

MPHY 619 Nervous System II **Credit 1. 1 Lecture Hour.**

This course is a separate module within the course MPHY 614.

MPHY 620 Gastrointestinal System **Credit 1. 1 Lecture Hour.**

This course is a separate module within the course MPHY 614.

MPHY 621 Excretory System **Credit 1. 1 Lecture Hour.**

This course is a separate module within the course MPHY 614.

MPHY 622 Endocrine System **Credit 1. 1 Lecture Hour.**

This course is a separate module within the course MPHY 614.

MPHY 623 Respiratory System **Credit 1. 1 Lecture Hour.**

This course is a separate module within the course MPHY 614.

MPHY 624 Biostatistics **Credits 2. 2 Lecture Hours.**

Introduction to methods used to acquire, extract, organize, analyze, store and interpret the major types of data of interest in systems biology.

MPHY 625 Bioinformatics **Credits 2. 2 Lecture Hours.**

Introduction to methods used to acquire, extract, organize, analyze, store and interpret the major types of data of interest in systems biology.

MPHY 631 Cardiovascular and Lymphatic Biology **Credits 4. 4 Lecture Hours.**

Advanced multidisciplinary analysis of the cardiovascular and lymphatic system that incorporates molecular and cell biology, anatomy, physiology and pharmacology; basic concepts include transport processes, feedback control and homeostasis; vascular biology includes endothelium, smooth muscle, capillary exchange, blood flow regulation, vasculogenesis, angiogenesis; lymphatic biology includes lymphangiogenesis, lymphatic system and lymph transport; cardiac biology includes myocytes, conduction tissue, myofilament activation and deactivation, myocardial contractility, electrical coordination of cardiac pumping, cardiac cycle, cardiac output and its regulation; cardiovascular integration includes intrinsic, neural and hormonal mechanisms, regulation of arterial pressure, cardiovascular responses to exercise, hemorrhage, inflammation and metabolic disorders.

Prerequisites: MSCI 601 or equivalent.

MPHY 632 Cardiovascular and Lymphatic Pathobiology**Credits 4. 4 Lecture Hours.**

Exploration of the pathophysiology underlying cardiovascular and lymphatic diseases, including atherosclerosis, cardiomyopathies, heart failure, hypertension, obesity, congenital abnormalities and valvular disorders; conceptual foundation is the tissue response to injury (inflammation) and the integrated reactions at the cellular, organ, system and whole organism levels initiated by a specific insult or disorder; presentation and critique of journal articles in the cardiovascular and lymphatic fields as well as development of research proposals.

Prerequisite: MPHY 631 or equivalent.**MPHY 633 Advanced Techniques in Cardiovascular and Lymphatic Research****Credits 1 to 4. 1 to 4 Other Hours.**

Specific techniques used in modern cardiovascular and lymphatic research under the guidance of a faculty expert; topics span intact animal to single cell techniques; includes animal models of human disease, advanced physiological imaging, mouse echocardiography, mouse intact papillary muscle, isolated microvessels/lymphatics, in situ evaluation of lymphatic/microvascular function, pressure/tension myography, primary lymphatic endothelial cell isolation/culture, and patch clamping.

Prerequisites: Approval of course coordinator.**MPHY 634 The Lymphatic System****Credits 3. 3 Lecture Hours.**

This course explores the myriad functions of the second circulation of the human body, the lymphatic system. Topics covered include lymphatic development; lymphangiogenesis; morphology and function of lymphatic capillaries, muscular lymphatics and lymph nodes; mechanisms of lymph formation and propulsion; intrinsic and extrinsic mechanisms of lymphatic pumping and flow regulation; role of the lymphatic system in inflammation and immunity; primary and secondary lymphatic disorders. Emphasis is on critique of the literature and self-directed integration of concepts and data into a research proposal.

MPHY 681 Seminar**Credit 1. 1 Lecture Hour.**

Focus will be on critical scientific thinking. Emphasis placed on oral communications, scientific writing and grant preparation.

Prerequisite: Approval of instructor.**MPHY 685 Directed Studies****Credits 1 to 6. 1 to 6 Lecture Hours.**

Limited investigation in fields other than those chosen for thesis or dissertation.

Prerequisite: Approval of instructor.**MPHY 689 Special Topics****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of physiology and associated basic sciences. May be repeated for credit when topics vary.

Prerequisite: Approval of instructor.**MPHY 691 Research Credit****Credits 1 to 15. 1 to 15 Lab Hours.**

MPIM - Microbial Pathogen Imm

MPIM 601 Microbial Pathogenesis of Human Disease**Credits 3. 3 Lecture Hours.**

Principles of microbe-host interactions at the molecular level. Selected medically important infectious diseases serve as paradigms for understanding how multiple pathogenic mechanisms contribute to disease.

Prerequisite: Approval of instructor.**MPIM 602 Immunoregulation****Credits 3. 3 Lecture Hours.**

In-depth exploration of the genetic, cellular and molecular mechanisms by which humoral and cellular immune responses are regulated; regulatory T cell circuits, molecules (interleukins, lymphokines), isotypic and idiotype regulation, hormonal effects, immunoregulatory defects, experimental manipulation of immunoregulatory networks.

Prerequisites: VTMI 649/POSC 649, BIOL 610 and approval of instructor.**MPIM 607 Applied Epidemiology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Application of epidemiologic concepts to the study of disease occurrence; descriptive epidemiologic methods in the study of diseases.

Prerequisite: Graduate classification.**MPIM 620 The Scientific Basis of Medicine****Credit 1. 1 Other Hour.**

A Journal Club in which recent research papers relevant to Medicine are presented by students and discussed by students and faculty.

MPIM 663/VTMI 663 Molecular Biology of Animal Viruses**Credits 3. 3 Lecture Hours.**

In-depth studies of the biochemistry and replication strategies of animal viruses and molecular mechanisms of pathogenesis for selected viral systems.

Prerequisite: Graduate classification in virology, molecular biology, biochemistry or approval of the instructor.**Cross Listing:** VTMI 663/MPIM 663.**MPIM 665 Viral Vectors and Gene Therapy****Credits 3. 3 Lecture Hours.**

This course will describe various viral vector systems, their development, and their use as research tools in biotechnology and in gene therapy. The course will consist of a mixture of short lectures and discussion of papers from the literature.

Prerequisites: MPIM 663/VTMI 663 or approval of instructor.**Cross Listing:** VTMI 665 and PLPA 665.**MPIM 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Limited investigation in fields other than those chosen for thesis or dissertation.

Prerequisite: Approval of instructor.**MPIM 689 Special Topics****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of medical sciences. May be repeated for credit.

Prerequisite: Approval of instructor.

MPSY - Psychiatry

MPSY 800 Psychiatry Clerkship

Credits 1.25 to 15. 1.25 to 15 Other Hours.

25 to 15. Introductory experience in the practice of psychiatry.

Prerequisite: Satisfactory completion of year two of the medical school curriculum.

MPSY 801 Bereavement Issues in Clinical Practice

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 4-week elective will provide the opportunity to experience and practice primary psychiatric care of patients under the close supervision of a staff physician. It will increase the student's familiarity with the basic "tasks" of mourning and emotional/psychological processes; enable the student to discriminate between uncomplicated and complicated bereavement especially identifying those factors that contribute to complications in grieving; increase student awareness of and vigilance toward bereaved patients' increased morbidity/mortality rates; help the student develop increased skill in conducting a sensitive clinical inquiry with bereaved individuals regarding their loss experience; familiarize the student with the current treatment principles described in the grief and bereavement psychological literature; acquaint the student with the role of self-help groups among the bereaved; develop the students' appreciation of how various members of the health care team participate in the psychosocial need of patients and families at the time of death in an acute care setting.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 802 Child and Adolescent Psychiatry

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 2- or 4-week elective will introduce the student to child psychiatry. The student will learn the process of child psychiatric evaluation, and will be introduced to issues related to diagnostic classification in children and adolescents. They will be exposed to various treatment modalities used in child psychiatry, including exposure to the issues surrounding the use of psychotropic medications in children.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 804 Child and Adolescent Psychiatry

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 2- or 4-week elective will introduce the student to child psychiatry. The student will learn the process of child psychiatric evaluation, and will be introduced to issues related to diagnostic classification in children and adolescents. They will be exposed to various treatment modalities used in child psychiatry, including exposure to the issues surrounding the use of psychotropic medications in children.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 806 Outpatient Psychiatry

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 4-week elective will provide the opportunity to experience and practice primary psychiatric care of patients under the close supervision of a staff physician. It will increase the student's familiarity and knowledge with the use of psychoactive medications, help the student gain further knowledge and experience in determination of individual patient treatment regimens, and help gain experience in the interactions between patients, therapists and family members.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 808 General Adult Psychology and Geriatric Psychology

Credits 1.25 to 10. 1.25 to 10 Other Hours.

Multidisciplinary assessment of elderly patients, including medical, social and family history; assessment of cognitive function; evaluation and management of older patients with Alzheimer's disease and other causes of Dementia, affective disorders and late life psychoses and of the elderly patient's family and the determination of their roles in the treatment of the older patient.

MPSY 809 Advanced Inpatient Psychiatry

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 4-week elective will provide the advanced student the opportunity to experience and practice primary psychiatric care of patients under the close supervision of a senior staff physician. Increase the student's familiarity and knowledge with the use of psychoactive medications; help the student gain further knowledge and experience in determination of individual patient treatment regimens; help the student gain experience in the complex interactions between patients, therapists, and family members; help the student gain experience in evaluating emergency patients through the opportunity to be the first physician evaluating patients in the emergency room; help the student gain experience as a co-therapist in group psychotherapy; help the student gain experience in longer term care with the patients via the opportunity to participate in follow up outpatient appointments.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 810 Consultation/Liaison Psychiatry

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 4-week elective will provide the student the opportunity to experience and practice primary psychiatric care of patients under the close supervision of a senior staff physician. Increase the student's familiarity and knowledge to recognize and treat common psychiatric disorders occurring in the medical-ill (e.g. delirium, dementia, substance abuse, anxiety, depression, somatoform disorders); recognize common medical problems and/or drug side effects which may masquerade as psychiatric illness; work effectively with treating staff and/or families to support and educate them so as to minimize the emotional and behavioral impact of the patient's illness; understand how medical illness may alter psychopharmacologic strategies, and why.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 811 Advanced Outpatient Psychiatry

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This 4-week elective will provide the advanced student the opportunity to experience and practice primary psychiatric care of patients under the close supervision of a senior staff physician. Increase the student's ability to gain further knowledge and experience in determination of individual patient treatment regimens; introduce and further the student experience as a co-therapist in group psychotherapy; help the student practice recognizing and managing issues of a therapeutic nature in the group setting.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 812 Advanced Inpatient Psychiatry**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 4-week elective will provide the advanced student the opportunity to experience and practice primary psychiatric care of patients under the close supervision of a senior staff physician. It will increase the student's familiarity and knowledge with the use of psychoactive medications, help the student gain further knowledge and experience in determination of individual patient treatment regimens, and help gain experience in the interactions between patients, therapists and family members.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MPSY 985 Off Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MPSY 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Psychiatry in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

MRAD - Radiology

MRAD 800 Radiology Clerkship**Credits 1 to 10. 1 to 10 Lecture Hours.**

Knowledge of the methods of medical imaging; conventional radiology, ultrasound, computerized tomography, magnetic resonance imaging, interventional radiology and nuclear radiology, and application of these methods to specific clinical problems.

Prerequisite: Admission to Medical School.

MRAD 801 Diagnostic Radiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

To provide an introductory experience in the practice of radiology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MRAD 802 Radiation Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

To provide an introductory experience in the practice of radiology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MRAD 803 Introduction to Radiation Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective is designed for students to become familiar with an overview of cancer, its pathogenesis, statistics, and treatment modalities. Students will gain experience and become familiar with the role of radiation therapy in a multidisciplinary modality setting.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MRAD 804 Diagnostic Radiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective provides students with a broad understanding of radiology principles, various diagnostic modalities, their respective value and limitations as well as the overall role of radiology in medicine today. Students will gain exposure through a combination of daily didactic lectures presented by faculty, residents, fellows and guests as well as through clinical learning experiences gained alongside faculty in one of many subspecialty bases including CT Scan, Ultrasound, Gastrointestinal, Emergency Department, Nuclear Medicine, MRI, Vascular/Interventional Radiology (VIR), Neuro MRI, Neuro CT Scan, Breast Imaging and Outpatient Imaging. Students are encouraged to express any special interest in a subspecialty before the beginning of the course in order to configure their rotation schedule accordingly.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MRAD 805 General Radiology at St. Luke/St. Joseph Medical Center**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

To provide an introductory experience in the practice of radiology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MRAD 806 Clinical Research Design and Application**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective is designed for students to participate in a clinical research project. This elective will increase the student's familiarity and knowledge of the student to principles of study design, data collection, data management and analysis. Students will participate in developing a professional manuscript preparation, review, and submission for publication.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

MRAD 807 Body Imaging**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The 4-week elective in Body Imaging is designed for motivated students planning a career in radiology. The course is organized as one-week rotations in Thoracic Imaging, Abdominopelvic CT, Body and Musculoskeletal MR, and Ultrasound. Students frequently encounter the opportunity to submit an interesting case to the American College of Radiology Case in Point repository for potential peer reviewed online publication.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 808 Diagnostic Radiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2-week elective is intended to re-familiarize the medical student with the basic principles of radiologic imaging. Students will be shown the many different modalities used within the Department of Radiology and will become familiar with interpreting medical diagnosis results using those modalities.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 809 Neuroradiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2-week elective in Neuroradiology is designed for motivated students planning a career in radiology. The course allows for flexibility within the department, but is primarily based on CT and MR imaging of the brain and spine. Experience with CT and MR angiography and a range of neurointerventional procedures is also available. Students frequently encounter the opportunity to submit an interesting case to the American College of Radiology Case in Point repository for potential peer-reviewed online publication.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 810 Current Concepts in Nuclear Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2-week elective is an introduction to common Nuclear Medicine procedures and techniques. This elective is designed to familiarize the student with the appropriate utilization of these techniques for diagnosis and prognosis in selected common problems in clinical medicine. Students will gain experience in correlating results of the Nuclear Medicine procedures and tests with pertinent clinical evaluation, pathophysiology, and anatomy.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 811 Pediatric Imaging**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2-week elective in Pediatric Imaging is designed for motivated students planning a career in radiology. The course allows for flexibility within the department, but is based around a multimodality experience in all facets of pediatric imaging, including radiographs, sonography, body CT and MR studies, and fluoroscopy. The integration of multiple imaging modalities and interaction with referring clinicians allows more comprehensive understanding of disease processes unique to children. Students frequently encounter the opportunity to submit an interesting case to the American College of Radiology Case in Point repository for potential peer reviewed online publication.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 812 Radiation Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective is designed for students to participate in interpretation of history, physical, laboratory and radiological findings in the management of cancer patients. Students will gain exposure with role of radiotherapy in multi-disciplinary cancer therapy and its integration with other disciplines like surgery and medical oncology.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 813 Diagnostic Radiology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective is designed for students to gain experience in the proper radiographic approach in evaluating clinical problems. This elective is designed to familiarize the student with the basic skills in interpretation of the more common x-ray examinations, CT scans, and ultrasound scans. Students will also become familiar with the proper performance of basic diagnostic imaging procedures, particularly the order performing the procedures.

Prerequisite: Satisfactory completion of the year three of the medical school curriculum.

MRAD 814 Diagnostic Radiology - Non Chosen Specialty**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This 2- to 4-week elective is designed for students to gain experience to re-familiarize the student with the basic principles of radiologic imaging. Students will be shown the many different modalities used within the department of Radiology and will become familiar with interpreting medical diagnosis results using those modalities. It is our hope that this course will lead to a better understanding of the many services provided by Radiology.

MRAD 985 Off Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

MRAD 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Radiology in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

MSCI - Medical Sciences

MSCI 601 Contemporary Topics in Advanced Cell Biology I**Credits 5. 5 Lecture Hours.**

Advanced cell and molecular biology course examining the molecular basis of cellular functions relevant to human health. Specific topics will vary but the course will focus on the basic structures, functions and properties of proteins, nucleic acids and lipids. There will be an emphasis on recent developments and the primary literature.

Prerequisites: BIOL 413, BICH 303 or equivalent.

MSCI 602 Contemporary Topics in Advanced Cell Biology II**Credits 5. 5 Lecture Hours.**

Continuation of MSCI 601. Advanced cell and molecular biology course examining the molecular basis of cellular functions relevant to human health. Specific topics will vary but the course will focus on emergent properties of complex cellular systems. There will be an emphasis on recent developments and the primary literature.

Prerequisites: MSCI 601 or equivalent.

MSCI 605 Foundations of Biomedical Informatics**Credits 3. 3 Lecture Hours.**

Medical decision-making; performance of diagnostic tests clinical decision support; mobile health and telemedicine; systems biology; visual analytics; data mining; medical information retrieval; public health informatics; algorithms; software engineering in healthcare; electronic health records; consumer health informatics.

Prerequisite: Graduate classification or approval of instructor.

MSCI 607 Life Science Entrepreneurship**Credits 3. 3 Lecture Hours.**

Independent study designed as an introduction and overview of the commercialization process involved in moving a research discovery from the bench to the market.

MSCI 608 Development and Commercialization of Human Therapeutics
Credits 2. 2 Lecture Hours.

Survey the principles and concepts of commercializing a human pharmaceutical drug within the context of a startup biotechnology; emphasis on the issues and concepts encountered in either academic or industrial careers in moving potential pharmaceutical drug towards approved therapeutic.

MSCI 609 Responsible Conduct of Research**Credit 1. 1 Lecture Hour.**

Responsible Conduct of Research (RCR) is defined by NIH as the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research.

Responsible conduct of research is an essential component of research training. This course is designed as a survey of basic topics that trainees will need to understand as they enter into the practice of research. The course will utilize outside reading assignments, online modules, class presentation and discussion of cases associated with each topic.

MSCI 610 Pathogenesis of Human Disease**Credits 1 to 4. 1 to 4 Lecture Hours.**

Molecular mechanisms of human disease processes; the main goal of the course is to provide students with an understanding of basic disease processes such as cardiovascular disease, cancer, inflammatory disease, AIDS, tuberculosis, diabetes, Alzheimer's disease and spinal cord injury.

MSCI 611 Experimental Design for Biomedical Science**Credits 3. 3 Lecture Hours.**

Students learn about the principles of experimental design. By the end of the course, the student should be able to incorporate appropriate design features into their own experiments and critically evaluate the experimental literature for design flaws and inappropriate use of statistics.

Prerequisite: Undergraduate or graduate statistics 3 hours.

MSCI 612 Current Topics in Cell Signaling**Credits 3. 3 Lecture Hours.**

The course provides an overview of intracellular signal transduction pathways utilized by various classes of growth factor, cytokine, integrin and G-protein coupled receptors. The course also will provide a clear understanding of the importance of these pathways in regulating cell growth, differentiation, apoptosis and other cellular processes, both under normal physiologic conditions as well as diseases.

MSCI 620 The Scientific Basis of Medicine**Credit 1. 1 Other Hour.**

Journal club in which recent research papers relevant to medicine are presented by students and discussed by students and faculty. May be taken four times for credit.

MSCI 630 Pathogenesis of Human Disease**Credits 4. 4 Lecture Hours.**

Upon completion of this course, the student will be able to recognize and describe the molecular events responsible for various human diseases. The student will be able to differentiate between various types of diseases and independently assemble a concise presentation on a particular disease topic.

MSCI 631 Pathogenesis of Human Disease – Introduction to Inflammation and Human Disease**Credit 1. 1 Lecture Hour.**

Upon completion of this course, the student will be able to recognize and describe the molecular events that occur in inflammation, along with innate and adaptive immune responses. Various inflammatory mediators and signaling events will be discussed in the context of inflammation alongside a general introduction to immune responses. A relevant clinical condition will be discussed to reinforce these concepts.

MSCI 632 Pathogenesis of Human Disease – Cardiovascular Disease**Credit 1. 1 Lecture Hour.**

Upon completion of this course, the student will be able to recognize and describe the molecular events that occur in the most frequent cardiovascular diseases affection the Western world, including coronary artery disease, ischemia, atherosclerosis, myocardial infarction, stroke, hypertension, cardiac hypertrophy, and heart failure.

MSCI 633 Pathogenesis of Human Disease – Infectious Disease**Credit 1. 1 Lecture Hour.**

Upon completion of this course, the student will be able to recognize and describe the molecular events that occur in response to bacterial and viral pathogens responsible for respiratory, gastrointestinal and urogenital disease, as well as AIDS and other viral infections.

MSCI 634 Pathogenesis of Human Disease – Neurodegenerative and Genetic Disease**Credit 1. 1 Lecture Hour.**

Upon completion of this course, the student will be able to recognize and describe the molecular events that occur in Alzheimer's, Parkinson's neurodegenerative disease in women, Muscular Dystrophy, neoplasia, tumor metastasis and dissemination, and breast cancer.

MSCI 635 Basic Immunology**Credits 2. 2 Lecture Hours.**

This course is designed to give students a basic and current understanding of the immune system. The course consists of lectures as well as presentations by a student (or teams of students) where the student/team describes the accepted paradigm for the lecture topic; identifies and discusses the historical references for the paradigm; and reviews and discusses current publications in the field, with the goal of determining if current data and research remain consistent or are inconsistent with the accepted paradigm in that area of immunology.

MSCI 636 Intermediate and Translational Immunology**Credits 2. 2 Lecture Hours.**

This course is designed to build on students' basic understanding of the immune system. Course consists of lectures on a clinical problem/disease by the director/guest lecturer; followed by student presentations describing how the immune system may impact the disease of interest, either positively or negatively, and a group discussion on how to modify clinical outcomes with immune-based interventions that translate basic understanding to clinical treatments. All participants will review and discuss current publications in the field.

MSCI 681 Seminar**Credit 1. 1 Lecture Hour.**

Focus will be on critical scientific thinking. Emphasis placed on oral communications, scientific writing and grant preparation.

Prerequisite: Approval of instructor.

MSCI 685 Directed Studies**Credits 1 to 6. 1 to 6 Lecture Hours.**

Limited investigation in fields other than those chosen for thesis or dissertation.

Prerequisite: Approval of instructor.

MSCI 687 Professionalism and Ethics**Credit 1. 1 Lecture Hour.**

Students learn about professionalism and ethics in the medical sciences.

MSCI 689 Special Topics**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of medical sciences. May be repeated for credit when topics vary.

Prerequisite: Approval of instructor.**MSCI 690 Theory of Medical Science Research****Credits 2. 2 Lecture Hours.**

Design of research experiments in various fields of medical sciences; evaluation of end results with the aid of examples taken from current scientific literature.

Prerequisites: Approval of instructor.**MSCI 691 Research Credit: Medical Science****Credits 1 to 15. 1 to 15 Other Hours.**

Research for thesis or dissertation.

Prerequisites: Approval of supervisory professor in chosen field.**MSCI 695 Frontiers in Medical Science Research****Credits 2. 2 Lecture Hours.**

Present status of research in a variety of significant medical sciences fields. Content depends on the availability of visiting lecturers who are selected because of distinguished international recognition in their field of research. May be repeated for credit.

Prerequisite: Graduate classification.**MSCI 920 The Scientific Basis of Medicine****Credit 1. 1 Other Hour.**

This course is a journal club in which recent research papers relevant to medicine are presented by students and discussed by students and faculty. May be repeated for credit four times.

MSEN -Materials Science & Engr

MSEN 601 Fundamental Materials Science and Engineering**Credits 3. 3 Lecture Hours.**

Fundamentals of microstructure- properties and relationship of materials. Topics will include: electronic and atomic structure of solids, structure of crystalline materials, imperfections in crystalline materials, introduction to dislocation theory, mechanical properties, fundamental thermodynamics of materials, phase equilibria and diagrams, diffusion, and kinetics of phase transformations.

Prerequisite: Graduate classification.**MSEN 602 Physics of Materials****Credits 3. 3 Lecture Hours.**

Understanding of modern molecular level description of underlying physico-chemical behavior and properties of materials; includes thermal, mechanical, kinetic (transport), electronic, magnetic and optical properties; rational basis for the synthesis, characterization and processing of such material, materials systems for engineering applications.

Prerequisite: MSEN 604, undergraduate quantum mechanics course, or approval of instructor.**MSEN 603 Fundamentals of Soft and Biomaterials****Credits 3. 3 Lecture Hours.**

Introductory graduate-level survey on the general areas of soft materials and biomaterials; includes basic concepts of colloidal particle physics, polymer physics and chemistry, and general concepts in biomaterials.

Prerequisites: Undergraduate general chemistry course; graduate classification.**MSEN 604 Quantum Mechanics for Materials Scientists****Credits 3. 3 Lecture Hours.**

Provides a background in quantum mechanics for graduate materials scientists or engineers with little or no quantum mechanics background. The following topics will be covered: origins of quantum theory, interpretation, Schrodinger equation and its applications, operator mechanics, approximation methods, angular momentum, the hydrogen atom, and quantum statistics.

Prerequisites: MATH 601, MATH 311 or approval of instructor; graduate classification.**MSEN 605 Field Theories in Materials Science****Credits 3. 3 Lecture Hours.**

Field theory concepts to understand and quantify a wide range of material behaviors, including, transportable quantities; development of constitutive relations; linear response theory and Maxwell's equations; deformation and motion of a continuum; Brownian motion; self-assembly and patterning within reaction-diffusion formulations; thermal and ion/charge transport; acoustic waves in solids; Fourier's equations.

Prerequisites: Basic courses in materials science; graduate classification.**MSEN 606 Multifunctional Materials****Credits 3. 3 Lecture Hours.**

In-depth analysis of multifunctional materials and composites, and their novel applications.

Prerequisites: MEMA 602/AERO 603/AERO 603/MEMA 602, MSEN 601.**Cross Listing:** AERO 606 and MEMA 606.**MSEN 607/MEEN 607 Polymer Physical Properties****Credits 3. 3 Lecture Hours.**

Macromolecular concepts; molecular weight characterization; solubility parameters; phase diagrams; viscoelasticity; rheology; thermal behavior; damage phenomena; morphology; crystallization; liquid crystallinity; nanocomposites.

Prerequisite: MEEN 222/MSEN 222 (or other intro to materials science course).**Cross Listing:** MEEN 607/MSEN 607.**MSEN 608 Nanomechanics****Credits 3. 3 Lecture Hours.**

Application of mechanics concepts to nano-scale behavior of materials. Review of continuum mechanics; Extensions to generalized continua; Nonlocal elasticity; Nano-scale plasticity. Focus on multi-scale modeling: Dislocation Dynamics; Quasi-Continuum method; Molecular dynamics with introductions to quantum mechanics and statistical mechanics.

Prerequisite: AERO 603/MEMA 602.**Cross Listing:** AERO 608 and MEMA 608.**MSEN 610/MEMA 613 Principles of Composite Materials****Credits 3. 3 Lecture Hours.**

Classification and characteristics of composite materials; micromechanical and macromechanical behavior of composite laminate; macromechanical behavior of laminates using classical laminate theory; interlaminar stresses and failure modes; structural design concepts, testing and manufacturing techniques.

Prerequisite: MEMA 602/AERO 603.**Cross Listing:** MEMA 613/MSEN 610.

MSEN 612/BIOL 602 Fundamentals of Transmission Electron Microscopy
Credits 3. 2 Lecture Hours. 6 Lab Hours.

State-of-the-art fundamentals in TEM; theoretical background supporting a strong hands-on course component comprising specimen preparation and image acquisition/interpretation; practical experience to attain a proficiency level permitting independent operation of one of the transmission electron microscopes in the Microscopy and Imaging Center.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: BIOL 602/MSEN 612.

MSEN 613/BIOL 603 Advanced Transmission Electron Microscope (TEM) Methodologies in Life and Materials Science (TEM II)
Credits 3. 1 Lecture Hour. 6 Lab Hours.

Advanced TEM methodologies, including specimen preparation and TEM imaging/analysis techniques as applicable to both biological and material samples; theory designed to support a strong hands-on component comprising specimen preparation, different imaging/diffraction/spectroscopic techniques and data interpretation.

Prerequisite: BIOL 602/MSEN 612 or MSEN 612/BIOL 602.

Cross Listing: BIOL 603/MSEN 613.

MSEN 614/BIOL 604 Fundamentals of Scanning Electron Microscopy and Environmental Scanning Electron Microscopy
Credits 2. 1 Lecture Hour. 3 Lab Hours.

Fundamentals of Scanning Electron Microscopy (SEM) and Environmental Scanning Electron Microscopy (ESEM). Provides biologists, material scientists and students from other disciplines with the techniques of operation of the scanning electron microscope (SEM) and the environmental SEM (ESEM) coupled with the appropriate theoretical background knowledge; individual instruction in support of their research endeavors involving SEM/ESEM.

Prerequisite: Graduate classification.

Cross Listing: BIOL 604/MSEN 614.

MSEN 616/MEEN 616 Surface Science
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Properties of surfaces, principles of classic and contemporary surface characterization techniques, recent development and roles of surface science in advanced technology.

Prerequisite: Graduate classification.

Cross Listing: MEEN 616/MSEN 616.

MSEN 617 Crystallography and Crystal Structure Determination
Credits 3. 3 Lecture Hours.

Symmetry operations in point group and space group; reciprocal lattice and kinematical diffraction theory; crystal structure determination by X-ray diffraction and transmission electron microscopy (TEM).

Prerequisites: Knowledge of calculus and vector algebra; graduate classification.

MSEN 618/MEEN 686 Composite Materials Processing and Performance
Credits 3. 3 Lecture Hours.

Fundamental science and design; processing and design interaction regarding multiphase composites; processing science, experimental characterization, laminate analysis; design structure and processing.

Prerequisite: Elasticity, continuum mechanics, or equivalent; graduate classification.

Cross Listing: MEEN 686.

MSEN 619 Materials Modeling of Phase Transformation and Microstructural Evolution
Credits 3. 3 Lecture Hours.

Computer modeling and simulation of microstructural evolution during various phase transformation processes in solid materials, including spinodal decomposition, ordering, martensitic transformation, ferroelectric and ferromagnetic domain evolution, dislocation dynamics, and crack propagation.

Prerequisites: Graduate classification and approval of instructor.

MSEN 620/MEEN 620 Kinetic Processes in Materials Science
Credits 3. 3 Lecture Hours.

Atomistic and mesoscale levels; foundation for microstructural evolution and behavior of materials; basic and irreversible thermodynamics; diffusion equations solutions; atomistic diffusion, nucleation; phase transformations: gas-solid, liquid-solid and solid-solid reactions; FiPy (finite volume solver for PDE) to simulate kinetic processes.

Prerequisites: MEEN 222/MSEN 222 or equivalent materials science course; preliminary general thermodynamics course is not necessary.

Cross Listing: MEEN 620.

MSEN 625/MEEN 625 Mechanical Behavior of Materials
Credits 3. 3 Lecture Hours.

Examination of deformation and microstructure mechanisms responsible for deformation and failure in metals; fatigue, creep, and fracture mechanisms of materials; emphasis on microstructural-mechanical property relationship.

Prerequisite: Undergraduate-level materials science course.

Cross Listing: MEEN 625/MSEN 625.

MSEN 626/MEEN 606 Polymers Laboratories
Credits 3. 2 Lecture Hours. 3 Lab Hours.

Introduction to basic experimental skills relating to polymers; experiments include polymerization, molecular weight determination, FTIR, tensile test, NMR, DSC, swelling index, viscosity, x-ray diffraction.

Prerequisite: Graduate classification.

Cross Listing: MEEN 606.

MSEN 634 Nano-scale Phenomena in Polymeric Systems
Credits 3. 3 Lecture Hours.

Fundamental and practical knowledge related to nano-scale phenomena in polymeric systems; discussions and critiques on related research activities; preparation for nanotechnology related career.

Prerequisite: Approval of instructor.

MSEN 635/MEEN 635 Flow and Fracture of Polymeric Solids
Credits 3. 3 Lecture Hours.

Relationship of molecular structure to flow and fracture in polymeric materials; introduction of viscoelastic fracture mechanics; micromechanisms of fracture including crazing; fatigue behavior of polymeric materials.

Cross Listing: MEEN 635/MSEN 635.

MSEN 636 Damage Mechanics and Failure in Composite Materials
Credits 3. 3 Lecture Hours.

Mechanisms and models related to damage and failure in composite materials subjected to mechanical loads.

Prerequisites: Courses in composite materials, elasticity; graduate classification.

Cross Listing: AERO 616 and MEMA 616.

MSEN 640 Thermodynamics in Materials Science**Credits 3. 3 Lecture Hours.**

Use of thermodynamic methods to predict behavior of materials; codification of thermodynamic properties into simplified models; principles, methods, and models to generate accurate equilibrium maps through computational thermodynamics software; applications to bulk metallic, polymeric and ceramic materials, defects, thin films, electrochemistry, magnetism.

Prerequisites: MEEN 222/MSEN 222 or equivalent; graduate classification.

MSEN 641/MEMA 641 Plasticity Theory**Credits 3. 3 Lecture Hours.**

Theory of plastic yield and flow of two and three-dimensional bodies; classical plasticity theories, unified viscoplastic theories, numerical considerations; applications and comparisons of theory to experiment.

Prerequisite: MEMA 602/AERO 603.

Cross Listing: MEMA 641/MSEN 641.

MSEN 643 Materials Electrochemistry and Corrosion**Credits 3. 3 Lecture Hours.**

Survey of thermodynamic and kinetic fundamentals of electrochemistry; multiscale materials corrosion mechanisms; details of interfacial aqueous electrochemical mechanisms and the environmental effects when materials are exposed to different conditions.

Prerequisite: Grade of C or better in MSEN 601; or approval of instructor.

MSEN 644 Corrosion and Electrochemistry Lab**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Laboratory practice and principles for corrosion and electrochemistry methods; design, carry out and analyze a series of labs illustrating the most important techniques in the field; builds to an open-ended corrosion engineering problem resulting in preparation of a technical report for a hypothetical client.

Prerequisite: Grade of C or better in MSEN 643; or approval of instructor.

MSEN 645/AERO 645 Failure Mechanics of Engineering Materials**Credits 3. 3 Lecture Hours.**

Introduction and integration of key experimental, theoretical and computational aspects of failure in engineering materials, including metals, alloys and polymers; brittle fracture, ductile fracture and brittle-to-ductile transitions.

Prerequisites: Graduate classification; MSEN 601.

Cross Listing: AERO 645/MSEN 645.

MSEN 646 Corrosion Prevention and Control Methods**Credits 3. 3 Lecture Hours.**

Cathodic protection and coatings; functional engineering approach to controlling and preventing aqueous corrosion; impressed current, galvanic anodes, organic, inorganic and hybrid coatings; case studies in oil and gas, energy, automotive and different industries.

Prerequisite: Grade of C or better in MSEN 643; or approval of instructor.

MSEN 655 Materials Design Studio**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Project-driven studio based on the integration of informatics and engineering systems design to address problems in materials discovery and development; projects derived from real industry-driven needs.

Prerequisites: Grade of C or better in ECEN 769/MSEN 660 or MSEN 660/ECEN 769, or MSEN 601 and MEEN 601, or equivalent; or approval of instructor.

MSEN 656 Mechanical and Physical Properties of Thin Films**Credits 3. 3 Lecture Hours.**

Mechanical properties (hardness, stress, strain, delamination, fracture) of films; nanomechanical testing techniques; electrical properties of thin films; electrical properties measurement techniques; magnetic properties of films; magnetic properties measurement techniques; laboratory includes (1) thin film fabrication (sputtering, PVD); (2) nanomechanical testing; (3) electrical/magnetic measurement.

Prerequisite: MEEN 222/MSEN 222, MSEN 601, or basic materials science background.

MSEN 657 Multiscale Modeling in Materials**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Introduction to a wide range of computational methods to simulate materials behavior at multiple scales.

Prerequisite: Approval of instructor.

MSEN 658 Fundamentals of Ceramics**Credits 3. 3 Lecture Hours.**

Atomic bonding; crystalline and glassy structure; phase equilibria and ceramic reactions; mechanical, electrical, thermal, dielectric, magnetic, and optical properties; ceramic processing.

Prerequisite: MEEN 222/MSEN 222 or equivalent or approval of instructor.

MSEN 659 Materials Design ePortfolio**Credits 0. 0 Other Hours.**

Capture and reflect upon components of what has been learned; why it matters within an electronic portfolio aligned with learning outcomes of the interdisciplinary program.

Prerequisites: Grade of C or better in ECEN 769/MSEN 660, MSEN 660/ECEN 769, or MSEN 601 and MEEN 601, or equivalent; MSEN 655 or concurrent enrollment; or approval of instructor.

MSEN 660/ECEN 769 Materials Informatics**Credits 3. 3 Lecture Hours.**

Use of informatics approaches to establish quantitative structure-property relations (QSPRs) in materials and materials systems; basic concepts of QSPRs and probability, supervised learning, unsupervised learning, optimal prediction and applications in materials discovery.

Prerequisite: Approval of instructor.

Cross Listing: ECEN 769/MSEN 660.

MSEN 666 Nanoindentation and Small-Scale Contact Mechanics**Credits 3. 3 Lecture Hours.**

Basic principles of elastic and plastic contact as they determine hardness and influence the measurement of mechanical properties by load and depth sensing indentation methods; application of nanoindentation techniques to small scale mechanical characterization of solid materials.

Prerequisites: Grade of C or better in MSEN 320, MEEN 467, MSEN 625/MEEN 625, MEEN 625/MSEN 625, AERO 603/MEMA 602, MEMA 602/AERO 603, or CVEN 613; or approval of instructor.

MSEN 670 Computational Materials Science and Engineering**Credits 3. 3 Lecture Hours.**

Modern methods of computational modeling and simulation of materials properties and phenomena, including synthesis, characterization, and processing of materials, structures and devices; quantum, classical, and statistical mechanical methods, including semi-empirical atomic and molecular-scale simulations, and other modeling techniques using macroscopic input.

Prerequisites: Approval of instructor; graduate classification.

Cross Listing: CHEN 670 and MEMA 670.

MSEN 681 Seminar**Credit 1. 1 Lecture Hour.**

Selected research topics in materials science and engineering presented by faculty, students, and outside speakers.

Prerequisite: Graduate classification.**MSEN 684 Professional Internship****Credits 1 to 9. 1 to 9 Other Hours.**

Directed internship in an industrial or laboratory setting under the supervision of successful, experienced personnel; work related to the student's career aspirations and areas of specialization. May be taken 2 times for credit.

Prerequisite: Graduate classification.**MSEN 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Special topics not within the scope of thesis research and not covered by other formal courses.

Prerequisite: Graduate classification.**MSEN 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.**

Selected topics in an identified area of materials science and engineering. Potential topics include: advanced phase transformations, advanced materials and processing, nanomaterials and nanotechnologies, computational modeling of materials, advanced techniques of spectroscopy, surface and interface phenomena, thin film processing, ceramic engineering, organic materials for electronic and photonic devices, biomedical microdevices, materials fabrication, processing and fabrication of semiconductors, and materials and processing for MEMS. May be repeated for credit.

Prerequisite: Approval of instructor.**MSEN 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research toward thesis or dissertation.

MXET - Multidiscip Engr Tech

MXET 635 Advanced Applied Dynamics for Mechatronic Systems**Credits 3. 3 Lecture Hours.**

Translational mechanical system dynamics, rotational mechanical system dynamics, electrical system dynamics modeling, mechatronics system dynamics, fluid power dynamics, rigid body dynamics and applied dynamics modeling using finite element method; automotive, oil and gas drilling and robotic applications.

Prerequisites: Graduate classification or approval of instructor.**MXET 681 Seminar****Credit 1. 1 Other Hour.**

Selected topics presented by the faculty, students and outside speakers.

Prerequisites: Graduate classification or approval of instructor.**MXET 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Directed study of topics not within scope of thesis research and not covered by other formal courses. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.**MXET 689 Special Topics in...****Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of engineering technology. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.**MXET 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. May be repeated for credit.

Prerequisites: Graduate classification or approval of instructor.**MXET 692 Professional Study****Credits 1 to 23. 1 to 23 Other Hours.**

Approved professional study of project.

Prerequisites: Approval of Instructor.

NEXT - Neuro Exper Therapeutic

NEXT 601 Advanced Neuroscience**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Details of mammalian nervous system, including humans; focus on organization of functional neural systems and their integrative action; use of original research papers.

Prerequisites: Approval of instructor.**NEXT 603 Neuropsychopharmacology****Credits 4. 4 Lecture Hours.**

Pharmacology as it relates to behavior and the central nervous system.

Prerequisites: MSCI 601, MSCI 602 or equivalents or course director approval.**NEXT 604 Special Regional Human Dissections****Credits 1 to 3. 1 to 3 Lecture Hours.**

Dissection of special regions with more detail than the medical gross anatomy course; histological, neural and gross anatomical material utilized.

Prerequisites: Approval of instructor.**NEXT 605 Molecular Mechanisms of Drug and Toxin Action I****Credits 4. 4 Lecture Hours.**

Introduction to the major tools and concepts of pharmacology. This is a two part series. By the end of these courses, the student will understand how selectivity of drug action is determined by pharmacological principles and will have a scientific basis for a rational approach to the study of drug actions and side effects.

Prerequisite: Approval of instructor.**NEXT 606 Molecular Mechanisms of Drug and Toxin Action II****Credits 4. 4 Lecture Hours.**

Survey of ocular drugs, overview of molecular signaling mechanisms and selected topics in developmental neuropharmacology.

Prerequisite: Approval of instructor.**NEXT 607 Molecular Mechanisms of Drug and Toxin Action III****Credits 4. 4 Lecture Hours.**

Interaction of drugs and toxins with neurotransmitter systems with primary emphasis on mechanisms involving receptor function that impacts central nervous system integration.

Prerequisite: Approval of instructor.**NEXT 608 Methods in Neurohistology****Credits 2. 2 Lecture Hours.**

Instruction in anesthetization, perfusion of animals; removal of neural tissues; histological processing, staining of tissues, including immunohistochemistry.

Prerequisites: Approval of instructor.

NEXT 620 Gross Anatomy**Credits 8. 8 Lecture Hours.**

This course will study the relationship of structures and the functional significance of the human body during its development and adult form as revealed through dissection.

Prerequisite: Approval of instructor.

NEXT 621 Teaching Gross Anatomy**Credits 2. 8 Lab Hours. 3 Other Hours.**

Provides teaching and supervisory experience for graduate students; instructs students in teaching and supervising medical students in Gross Anatomy; students observe in the laboratory and present at least one lecture.

Prerequisites: Approval of instructor.

NEXT 622 Teaching Medical Histology**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Provides teaching and supervisory experience for graduate students; instructs students in teaching and supervising medical students in Microscopic Anatomy.

Prerequisite: Approval of instructor.

NEXT 623 Teaching in Medical Neuroscience**Credits 2. 3 Lab Hours. 5 Other Hours.**

Assist in the teaching of Medical Neuroscience, to include lectures, laboratories and examination setup and proctoring.

Prerequisites: Approval of instructor.

NEXT 681 Seminar**Credit 1. 1 Lecture Hour.**

Focus will be on critical scientific thinking. Emphasis placed on oral communications, scientific writing and grant preparation.

Prerequisite: Graduate student in medicine. Approval of instructor.

NEXT 685 Directed Studies**Credits 1 to 6. 1 to 6 Lab Hours.**

Limited investigation in fields other than those chosen for thesis or dissertation.

Prerequisite: Approval of instructor.

NEXT 689 Special Topics**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of pharmacology and toxicology. May be repeated for credit when topics vary.

Prerequisite: Approval of instructor.

NEXT 989 Special Topics in Medical Anatomy**Credits 1 to 2. 1 to 2 Lecture Hours.**

Selected topics in an advanced area of medical neuroscience, anatomy, and medical pharmacology.

NEXT 999 NEXT Problems**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the Neuroscience and Experimental Therapeutics department in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

NFSC - Nutrition and Food Science

NFSC 601/ANSC 601 General Animal Nutrition**Credits 3. 3 Lecture Hours.**

Comparative nutrition of animal species contrasting digestive, metabolic and physiological functions involved in processing and using nutrients.

Prerequisite: ANSC 303/NFSC 303 or ANSC 318 or equivalent.

Cross Listing: ANSC 601/NFSC 601.

NFSC 602/ANSC 602 Energetics of Metabolism and Growth**Credits 3. 3 Lecture Hours.**

Current fundamental concepts in protein and energy metabolism relating to nutrients required for maintenance, growth and development of animals.

Prerequisite: BICH 410 or approval of instructor.

Cross Listing: ANSC 602/NFSC 602.

NFSC 605 Chemistry of Foods**Credits 3. 3 Lecture Hours.**

Chemical covalent and noncovalent interactions in food systems; the glass transition and moisture in foods; carbohydrate chemistry; reactions of food lipids; food protein functionality; chemistry of flavor; processing chemistry; food additives; and nutraceutical phytochemicals.

Prerequisite: BICH 410 or BICH 603.

NFSC 606/DASC 606 Microbiology of Foods**Credits 3. 3 Lecture Hours.**

Nature and function of beneficial and defect-producing bacteria in foods; food-borne illness, effects of processing, storage and distribution; techniques for isolation and identification from foods.

Cross Listing: DASC 606/NFSC 606.

NFSC 607/ANSC 607 Physiology and Biochemistry of Muscle as a Food**Credits 3. 3 Lecture Hours.**

Biochemical, histological, anatomical and physical characteristics of muscle cells and factors associated with transformation of muscle cells into meat.

Prerequisite: BICH 410 or approval of department head.

Cross Listing: ANSC 607/NFSC 607.

NFSC 610 Nutritional Pharmacometrics of Food Compounds**Credits 3. 3 Lecture Hours.**

Introduction into nutritional pharmacokinetics and pharmacodynamics of food compounds; specific examples of toxicological and pharmacological effects of food compounds.

Prerequisite: NFSC 202, NFSC 203, NFSC 201, CHEM 227, or CHEM 222, or instructor approval.

NFSC 611/POSC 611 Advanced Egg & Poultry Meat Processing**Credits 3. 3 Lecture Hours.**

Advanced Egg & Poultry Meat Processing. Focuses on egg markets, egg processing, grading, packaging, safety, quality and consumer acceptance of shell eggs; poultry meat processing (specifically turkeys and broilers), meat quality, markets, consumer acceptance of poultry meat and safety.

Prerequisite: Graduate classification.

Cross Listing: POSC 611/NFSC 611.

NFSC 613/ANSC 613 Protein Metabolism**Credits 3. 3 Lecture Hours.**

Basic concepts and recent advances in protein metabolism in animals with emphasis on physiological and nutritional significances; discussion of protein digestion; absorption of peptides; absorption, synthesis and degradation of amino acids; hormonal and nutritional regulation of protein turnover; determination of protein quality and requirements.

Prerequisite: BICH 411 or BICH 601 or equivalent or approval of instructor.

Cross Listing: ANSC 613/NFSC 613.

NFSC 614 Fermentation and Gastrointestinal Microbiology**Credits 3. 3 Lecture Hours.**

Fermentation and gastrointestinal ecosystems in terms of microorganisms present, their activities and requirements and their interactions in a dynamic system.

Prerequisite: Beginning microbiology and/or biochemistry or approval of instructor.

Cross Listing: POSC 614 and VTMI 614.

NFSC 617/ANSC 617 Experimental Techniques in Meat Science**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Methods used in separating and identifying muscle proteins and fats; techniques for determining postmortem changes of muscle tissue as a result of antemortem treatments.

Prerequisite: ANSC 607/NFSC 607; BICH 411.

Cross Listing: ANSC 617/NFSC 617.

NFSC 618/ANSC 618 Lipids and Lipid Metabolism**Credits 3. 3 Lecture Hours.**

Chemical nature of various classes of lipids and lipid-derived hormones; absorption and metabolism of fatty-acids and lipids; regulation of lipid biosynthesis and obesity; relationship between lipid metabolism and cholesterol homeostasis; lipids as hormones.

Prerequisite: BICH 410 or approval of instructor.

Cross Listing: ANSC 618/NFSC 618.

NFSC 619 Molecular Methods for Microbial Characterization**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Underlying principles of molecular methods for microbial detection and characterization in natural and man-made ecosystems; emphasis on method application and data interpretation; emphasis on microbial pathogens and indicator organisms in foods and environment; laboratory covers select protocols.

Prerequisites: NFSC 326/ANSC 326; SCSC 405; POSC 429; approval of instructor.

Cross Listing: SCSC 619, POSC 619, and VTMI 619.

NFSC 623/BAEN 623 Nanotechnology in Food Processing**Credits 3. 3 Lecture Hours.**

Fundamental and applied knowledge related to nanoscale systems and technologies utilized in processing of foods; includes nanoscale physico-chemical properties of foods, applications, manufacture and analysis of nanotechnologies for food processing and preservation; relevant industrial and regulatory food nanotechnology associated aspects.

Prerequisites: NFSC 312/DASC 312, NFSC 313/DASC 313, NFSC 315/AGSM 315, or AGSM 315/NFSC 315, or equivalent coursework, or approval of instructor.

Cross Listing: BAEN 623/NFSC 623.

NFSC 629/POSC 629 Microbiology of Food Irradiation**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Lecture plus laboratory overview of electron beam and x-ray based food irradiation principles; provides a working knowledge of using electronic pasteurization as a means of destroying microbial pathogens or retarding microbial spoilage in foods.

Cross Listing: POSC 629/NFSC 629.

NFSC 630/SCSC 630 Cereal Grains for Human Food**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Fundamental concepts of dry milling, wet milling, oil extraction, baking, malting, brewing, storage, sanitation and quality evaluation and control interrelated with physical and biochemical properties of cereals and their products; use of instruments and techniques to evaluate cereal quality.

Prerequisite: Approval of instructor.

Cross Listing: SCSC 630/NFSC 630.

NFSC 631 Food Carbohydrates**Credits 3. 3 Lecture Hours.**

Chemistry, structure, functionality and nutritional properties of food carbohydrates; fiber chemistry, functionality and nutritional properties, artificial sweeteners, starch structure and functionality and hydrocolloid functionality.

Prerequisite: BICH 410. (Offered in alternate years.)

NFSC 632 Nutrition in Disease**Credits 3. 3 Lecture Hours.**

Human nutritional requirements in health and disease, emphasizing effects of disease states on intake, digestion, absorption, metabolism and excretion of nutrients; relationship of diet to development of certain diseases.

NFSC 634 Oilseed Proteins for Foods**Credits 3. 3 Lecture Hours.**

World production, composition, processing technologies, uses of products (oil, meal, protein concentrates and isolates, and texturized products) in feeds and foods; present and potential food applications of oilseed proteins.

Prerequisites: CHEM 228 and CHEM 317. (Offered in alternate years.)

NFSC 635 Oil and Fat Food Products**Credits 3. 3 Lecture Hours.**

Composition, properties and reactions; sources, handling and storage of raw materials; extraction refining and bleaching; hydrogenation, deodorization, esterification and interesterification; fractionation; uses in salad oils, shortenings, margarine, bakery products and other foods.

Prerequisites: CHEM 228 and CHEM 317. (Offered in alternate years.)

NFSC 640 Therapeutic Microbiology I**Credits 3. 3 Lecture Hours.**

Alimentary (gastrointestinal) microbiology including (i) the "normal" intestinal microbiota; (ii) probiotic and prebiotic nutritional supplements; (iii) recombinant pharmabiotics; (iv) gut-associated lymphoid tissue and mucosal immunity; (v) foodborne gastrointestinal pathogens; and (vi) fermented products as functional foods.

Prerequisite: Undergraduate survey course in microbiology (or instructor's consent).

NFSC 641 Nutritional Biochemistry I**Credits 3. 3 Lecture Hours.**

Integration of the intermediary metabolism of glucose, amino acids and lipids with nutrition, physiology and pathophysiology in animals; regulation of metabolic pathways in cells, tissues and the whole body under normal and disease conditions; functions of vitamins and minerals in nutrient metabolism and health.

Prerequisite: BICH 411 or BICH 604. Offered during the fall semester.

NFSC 642 Nutritional Biochemistry II**Credits 3. 3 Lecture Hours.**

Integration of nutrition, biochemistry and other life sciences focusing on nutrients and their needs in healthy and unhealthy individuals; macronutrients and their metabolism and the pertinent regulation; nutrient sensing and signaling pathways; nutritional and hormonal regulation of gene expression; commonly used nutritional and biochemical assays.

Prerequisites: NFSC 475, BICH 410 or equivalent.**NFSC 644 Disease Mechanisms of Foodborne Pathogens****Credits 3. 3 Lecture Hours.**

Principles of pathogenicity of foodborne bacteria; mechanisms used by disease-causing bacteria leading to human illness; basic principles of immunology and human and bacterial physiology; investigation of bacterial virulence factors and effects of stress response, quorum sensing and other external factors.

Prerequisite: NFSC 326/ANSC 326 or BIOL 351, or approval of instructor.**NFSC 645/POSC 645 Nutrition and Metabolism of Vitamins****Credits 3. 3 Lecture Hours.**

Chemistry and metabolism of the fat soluble and water soluble vitamins and their roles in animals; integrates cellular biochemistry and metabolism of the vitamins in vertebrate animals.

Prerequisites: POSC 411 or ANSC 303/NFSC 303; BICH 410 or BICH 603.**Cross Listing:** POSC 645/NFSC 645.**NFSC 646 Fundamentals of Space Life Sciences****Credits 3. 3 Lecture Hours.**

Integrates nutrition, physiology, and radiation biology to define major biological problems in long duration space flight; provide an overview of the problems of bone loss, muscle wasting, and radiation-enhanced carcinogenesis along with potential countermeasures; focus on nutritional interventions and exercise protocols.

Cross Listing: NUEN 646 and KINE 646.**NFSC 647/ANSC 647 Technology of Meat Processing and Distribution****Credits 3. 3 Lecture Hours.**

Quantitative and qualitative characteristics of meat and meat products as related to food technology processing operations; manufacturing, preservation, packaging and merchandising.

Cross Listing: ANSC 647/NFSC 647.**NFSC 650/POSC 650 Nutrition and Metabolism of Minerals****Credits 3. 3 Lecture Hours.**

Nutritional significance of minerals in animal metabolism; chemical, biochemical and physiological role of minerals and homeostatic control in animal metabolism.

Prerequisites: POSC 411 or ANSC 303/NFSC 303; BICH 410 or BICH 603.**Cross Listing:** POSC 650/NFSC 650.**NFSC 651/WFSC 647 Nutritional Biochemistry of Fishes****Credits 3. 3 Lecture Hours.**

Principles of nutritional biochemistry including nutrient metabolism and biochemical energetics with special emphasis on finfish and shell fish.

Prerequisite: BICH 410 or equivalent.**Cross Listing:** WFSC 647/NFSC 651.**NFSC 655 Nutrition and Healthy Aging****Credits 3. 3 Lecture Hours.**

Fusion of biology of aging and geriatric nutrition; different aging theories, pathophysiology of aging and age-related diseases, nutritional needs of older adults, nutritional impacts on lifespan and healthspan and nutritional interventions for healthy aging.

Prerequisite: Graduate classification.**NFSC 657/ANSC 657 Hazard Analysis and Critical Control Point System****Credits 3. 3 Lecture Hours.**

Examination of the Hazard Analysis and Critical Control Point (HACCP) principles specifically related to meat and poultry; microbiological and process overviews; good manufacturing practices (GMP) and standard operating procedures (SOP) development; team-building and implementation into industry operations. This class is designed for the production of food and fulfills the training requirements of USDA's HACCP regulation for meat and poultry (9 CFR Part 417), and FDA's HACCP regulations for fish and fishery products (21 CFR Part 123 and 1240) and for juice (21 CFR Part 120).

Cross Listing: ANSC 657/NFSC 657.**NFSC 667/ANSC 667 Industrial Processed Meat Operations****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Application of scientific principles and business practices to manufactured meat products; interrelationships among marketing, manufacturing, product development, regulatory compliance and quality assurance in commercial processed meat operations.

Prerequisite: Approval of instructor.**Cross Listing:** ANSC 667/NFSC 667.**NFSC 669 Experimental Nutrition & Food Science Laboratory****Credits 4. 1 Lecture Hour. 6 Lab Hours.**

Experimental Nutrition & Food Science Laboratory. Nutritional intervention in animal models of metabolic or emotional disorders; genetic modifications or pathogens in food products; analyses of gene expression and behavior.

Prerequisite: BICH 432/GENE 432 or GENE 432/BICH 432 recommended; graduate in nutrition or related major.**NFSC 670/ANSC 670 Quality Assurance for the Food Industry****Credits 3. 3 Lecture Hours.**

Principles of food system process control; statistical process control (SPC); tools required to assure uniform communication and understanding of quality assurance systems.

Prerequisite: Graduate classification.**Cross Listing:** ANSC 670/NFSC 670.**NFSC 671 Critical Evaluation of Nutrition and Food Science Literature: Evidence Based Reviews****Credits 3. 3 Lecture Hours.**

Evaluation of scientific literature, research methods within the literature, and the quality of scientific studies to produce an evidence-based review in areas specific to nutrition and food science.

Prerequisites: NFSC 202 or NFSC 203; STAT 302; knowledge of nutrition, statistics, and technical writing helpful.**NFSC 679/POSC 679 Lipoproteins in Health and Disease****Credits 3. 3 Lecture Hours.**

Understanding of lipoprotein biology as it relates to nutrient delivery and disease development; emphasis on understanding how structure influences the function of different lipoprotein particles in human and avian systems; opportunity to study individual lipoprotein profiles or those of animals by modern imaging techniques; background in basic lipid biochemistry helpful.

Cross Listing: POSC 679/NFSC 679.**NFSC 681 Seminar****Credits 0-1. 0-1 Other Hours.**

Oral reports and discussions of current research and developments in nutrition and food science designed to broaden understanding of problems and to stimulate research.

NFSC 684 Professional Internship**Credits 0 to 16. 0 to 16 Other Hours.**

Experience in application of formal training to a commercial operation under supervision of operations manager and designated faculty member; investigation of matter of mutual interest and report results in a professional paper approved by the graduate committee.

NFSC 685 Directed Studies**Credits 0 to 4. 0 to 4 Other Hours.**

Directed study of selected problems emphasizing recent developments in research techniques.

NFSC 687/ANSC 687 Sensory Evaluation of Foods**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Application of sensory science principles and practices to food systems including an understanding of discriminative, descriptive and consumer sensory techniques.

Prerequisite: CHEM 222 or CHEM 228.**Cross Listing:** ANSC 687/NFSC 687.**NFSC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Other Hours.**

Special topics in an identified area of nutrition and food science. May be repeated for credit.

NFSC 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Investigations leading to thesis or dissertation in various areas of nutrition and food science.

NFSC 697/ANSC 697 Applied Microbiology for Foods of Animal Origin: Processing, Sanitation and Sanitary Design**Credits 3. 3 Lecture Hours.**

Application of basic food microbiology knowledge and principles to food production processes and products; sources of microbiological contamination and their impact on food safety and spoilage; application of sanitary design and validation; testing and auditing to monitor and trouble-shoot the process.

Prerequisites: DASC 326 or NFSC 326/ANSC 326, or NFSC 606/DASC 606, or equivalent.**Cross Listing:** ANSC 697/NFSC 697.

NRSC - Neuroscience

NRSC 601/BIOL 627 Principles of Neuroscience I**Credits 3. 3 Lecture Hours.**

Detailed introduction to the basic fundamentals of cellular and molecular neuroscience; topics include membrane potentials, action potential generation, and the mechanisms underlying synaptic transmission, as well as their molecular basis.

Prerequisites: Graduate classification or approval of instructor.**Cross Listing:** BIOL 627/NRSC 601.**NRSC 602/BIOL 628 Principles of Neuroscience II****Credits 3. 3 Lecture Hours.**

Fully integrated overview of nervous system organization and systems-level neurobiology; broad topics include sensory systems and sensory systems function, motor systems and neuromuscular function, central pattern generation and locomotion, homeostatic regulation, motivation, emotions, learning and memory, and circadian rhythms.

Prerequisites: Graduate classification or approval of instructor.**Cross Listing:** BIOL 628/NRSC 602.**NRSC 603/VIBS 603 Neuroanatomy****Credits 4. 2 Lecture Hours. 6 Lab Hours.**

Gross, developmental and microscopic anatomy of nervous system of selected laboratory and domestic animals.

Prerequisite: Approval of instructor.**Cross Listing:** VIBS 603/NRSC 603.**NRSC 604/VIBS 604 Biomedical Neuroendocrinology and Endocrine Disorders****Credits 3. 3 Lecture Hours.**

Gross and functional anatomy and endocrine functions of neuroendocrine systems, hypothalamus and pituitary. Neuroendocrine control of puberty, sexual behavior, menstruation, ovulation, pregnancy, labor, lactation, testis, thyroid, growth, stress, diabetes, obesity, sleep, memory, learning and aging and their disorders. Overview biosynthesis, transport and signaling of neuropeptides, prostaglandins, peptide and steroid hormones.

Prerequisite: Approval of instructor.**Cross Listing:** VIBS 604/NRSC 604.**NRSC 605/VIBS 606 Neuroanatomical Systems****Credits 3. 3 Lecture Hours.**

Emphasis on major neural systems that govern identifiable physiological functions, behavior and neurodegenerative disease; whole-brain anatomy is approached from a "systems" perspective, wherein components of defined functional systems are described in terms of their location, inputs and outputs, and physiological/behavioral significance in health and disease.

Prerequisite: Approval of instructor.**Cross Listing:** VIBS 606/NRSC 605.**NRSC 606/PSYC 606 Learning****Credits 3. 3 Lecture Hours.**

Procedural and theoretical issues in study of basic learning mechanisms in animals and humans, including Pavlovian and instrumental conditioning. Application of this work to other domains and relevant biological mechanisms also discussed.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** PSYC 606/NRSC 606.**NRSC 609/PSYC 609 Physiological Psychology****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Current research and methodological procedures on physiological bases of sensation-perception, memory and learning, arousal-sleep-attention, emotions and motivation.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** PSYC 609/NRSC 609.**NRSC 611 Molecular Biology of Differentiation and Development****Credits 3. 3 Lecture Hours.**

Major paradigms of eukaryotic gene regulation in terms of the role of gene expression during ontogeny and the effect of dysfunction in these processes on the neoplastic state.

NRSC 615/PSYC 615 Perceptual Processes**Credits 3. 3 Lecture Hours.**

Complex sensory and perceptual phenomena with emphasis on the relationship between perception and motivation, cognition, creativity and instinctive/ethological; learning/experiential factors in higher level perceptual processes.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** PSYC 615/NRSC 615.

NRSC 616/VIBS 616 Advanced Developmental Neurotoxicology**Credits 3. 3 Lecture Hours.**

Study of mechanisms of toxicity of substances potentially devastating to the developing brain and spinal cord including lead, mercury and other heavy metals, alcohol, nicotine (smoking), pesticides, flame retardants and others.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** VIBS 616.**NRSC 621/VIBS 621 Functional Neuroanatomy****Credits 4. 4 Lecture Hours.**

A comprehensive review of the neuroanatomical determinants of function; rigorous neuroanatomical foundation relevant for research investigating changes in neural pathways and/or networks involved in sensory and motor functions, learning and memory, perception, selective attention, as well as recovery of function following brain damage.

Cross Listing: VIBS 621/NRSC 621.**NRSC 633 Neuropsychopharmacology****Credits 4. 4 Lecture Hours.**

Interaction of drugs and toxins with neurotransmitter systems with primary emphasis on mechanisms involving receptor function that impacts central nervous system integration.

Prerequisite: Approval of course coordinator.**NRSC 634/BIOL 634 Comparative Neurobiology****Credits 3. 3 Lecture Hours.**

Cellular, molecular and systems neurobiology, together with neuroethology. A comparative approach to subject matter is stressed. Topics such as evolution of nervous systems and their diverse structure and complex functions are dealt with.

Cross Listing: BIOL 634/NRSC 634.**NRSC 635/BIOL 601 Biological Clocks****Credits 3. 3 Lecture Hours.**

Introduction to the formal properties of biological rhythms; cellular and molecular bases for rhythmicity; temporal adaptations of organisms using clocks.

Prerequisites: Graduate classification or approval of instructor.**Cross Listing:** BIOL 601/NRSC 635.**NRSC 636/BIOL 615 Signaling in Behavior and Development****Credits 3. 3 Lecture Hours.**

Will focus on signaling pathways used in multicellular animals. In each lecture, major signaling pathways used in behavior, physiology, and development will be introduced at the molecular level, and then be discussed in the context of organismal biology.

Prerequisite: Graduate classification.**Cross Listing:** BIOL 615/NRSC 636.**NRSC 640/VIBS 640 Neurobiology****Credits 1 to 5. 1 to 5 Lecture Hours.**

Biology of the mammalian central nervous system with emphasis on cellular and molecular interactions; contemporary research topics in areas such as neuron-glia interactions, neuroimmunology, neuroendocrinology, developmental neurobiology and neurogenetics; extensive readings from primary literature.

Prerequisites: Undergraduate or graduate cell biology, genetics and biochemistry or approval of instructor.**Cross Listing:** VIBS 640/NRSC 640.**NRSC 641 Principles of Neuropsychology****Credits 3. 3 Lecture Hours.**

Review of major areas of cognitive functioning including concentration, memory, language, visuospatial/construction skills and executive functions; review of neurobehavioral syndromes including dementia, epilepsy, head injury, stroke, drug toxicity, etc.; assessment of deficits associated with disorders.

Prerequisites: PSYC 624 or PSYC 627 or equivalent as approved by instructor.**NRSC 644/BIOL 644 Neural Development****Credits 3. 3 Lecture Hours.**

Classical and current research literature to explore the major events in the development of a nervous system, including topics ranging from neurogenesis to synapse information.

Prerequisite: Graduate classification.**Cross Listing:** BIOL 644/NRSC 644.**NRSC 649/PSYC 649 Seminar in Behavioral Neuroscience****Credits 3. 3 Lecture Hours.**

Behavioral neuroscience; including behavioral pharmacology, neuropharmacology, methods and techniques, drug reinforcement, behavioral toxicology, pain perception and ingestive behavior. May be repeated up to three times for credit.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** PSYC 649/NRSC 649.**NRSC 650/PSYC 650 Clinical Psychopharmacology****Credits 3. 3 Lecture Hours.**

Survey of topics in clinical psychopharmacology, including pharmacodynamics, major neurotransmitter systems, and therapeutic applications and limitations.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** PSYC 650/NRSC 650.**NRSC 671/PSYC 671 Experimental Design for Behavioral Scientists****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Intensive practical study of designs of special interest to behavioral scientists; repeated measures designs.

Prerequisites: Approval of instructor.**Cross Listing:** PSYC 671/NRSC 671.**NRSC 681 Seminar****Credits 1 to 3. 1 to 3 Other Hours.**

Presentation of current research in neuroscience and related areas. May be repeated for credit.

Prerequisite: Graduate classification.**NRSC 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study conducted under the direction of a member of the faculty of neuroscience of selected problems in the field of neuroscience.

Prerequisites: Graduate classification and approval of Texas A&M Institute for Neuroscience Chair.**NRSC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of neuroscience. May be repeated for credit.

Prerequisite: Graduate classification.

NRSC 690 Theory of Research**Credits 3. 3 Lecture Hours.**

Theory and design of research related to current biomedical problems especially those involving study of animal disease; philosophical perspectives underlying historical advances in research pertaining to the study, prevention and treatment of disease. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Graduate classification.**Cross Listing:** VIBS 690, VPAT 690 and VTPP 690.**NRSC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research in neuroscience conducted under the direction of a member of the faculty of neuroscience for thesis or dissertation credit.

Prerequisite: Graduate classification and approval of instructor.**NRSC 698/BIOL 698 Behavior, Genes, and Evolution****Credits 3. 3 Lecture Hours.**

Introduces an integrative approach to the study of animal behavior, complementing evolutionary and ecological perspectives with molecular and genetic approaches and methodologies.

Prerequisite: Graduate classification.**Cross Listing:** BIOL 698/NRSC 698.

NUEN - Nuclear Engineering

NUEN 601 Nuclear Reactor Theory**Credits 3. 3 Lecture Hours.**

Neutron-nucleus interactions; neutron energy spectra; transport and diffusion theory; multigroup approximation; criticality calculations; cross-section processing; buildup and depletion calculations; modern reactor analysis methods and codes.

Prerequisite: Approval of instructor.**NUEN 604 Radiation Interactions and Shielding****Credits 3. 3 Lecture Hours.**

Basic principles of radiation interactions and transport, especially as related to the design of radiation shields. Radiation sources, nuclear reactions, radiation transport, photon interactions, dosimetry, buildup factors and fast neutron shielding.

Prerequisites: NUEN 302 or equivalent; MATH 308; BS in engineering or physical sciences.**NUEN 605 Radiation Detection and Nuclear Materials Measurement****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Laboratory-based course studying the fundamentals of nuclear materials measurements; advanced radiation detection instrumentation with a specific focus on measuring nuclear materials (uranium, plutonium, and other actinides); nuclear material measurements include detection, identification, and quantification of the materials in a fuel cycle facility and in the field.

Prerequisite: Graduate classification.**NUEN 606 Reactor Analysis and Experimentation****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Perturbation theory; delayed neutrons and reactor kinetics; lattice physics calculations; full core calculations; analysis and measurement of reactivity coefficients; analysis and measurement of flux distribution; analysis and measurement of rod worths; critical and subcritical experiments.

Prerequisite: Approval of instructor.**NUEN 608 Fast Spectrum Systems and Applications****Credits 3. 3 Lecture Hours.**

Design and analysis of nuclear systems and nuclear fuel cycles; data, methods and tools for advanced nuclear system modeling; systems analysis; sustainable development of nuclear energy, fast spectrum systems; partitioning & transmutation; hybrid systems; Advanced Fuel cycle program; Generation IV fast reactors; design aspects of Advanced Fast Reactors: neutronics; heat removal; safety; materials; systems.

Prerequisite: Graduate classification or approval of instructor.**NUEN 609 Nuclear Reactor Safety****Credits 3. 3 Lecture Hours.**

Analysis and evaluation applied to reactor design for accident prevention and mitigation; protective systems and their reliability, containment design, emergency cooling requirements, reactivity excursions and the atmospheric dispersion of radioactive material; safety problems associated with light-water power reactors and proposed fast reactor systems.

Prerequisites: NUEN 601 and NUEN 623 or approval of instructor.**NUEN 610 Design of Nuclear Reactors****Credits 4. 4 Lecture Hours.**

Application of fundamentals of nuclear physics and reactor theory with engineering fundamentals to design of nuclear reactors.

Prerequisites: NUEN 602 or registration therein; NUEN 410 or approval of instructor.**NUEN 611 Radiation Detection and Measurement****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Interactions of radiation with matter behavior of various nuclear radiation detectors studied both theoretically and experimentally in the laboratory; properties of radionuclides useful to industry and medicine considered and evaluated from an engineering point of view.

Prerequisite: Graduate classification, enrollment in NUEN 613 or instructor approval.**NUEN 612 Radiological Safety and Hazards Evaluation****Credits 3. 3 Lecture Hours.**

State and Federal regulations concerning radioactive materials; radiation safety as applied to accelerators, nuclear reactors, medical therapy and diagnostic devices, and radioactive byproducts; rigorous methods of analysis applied to computation of biological radiation dose and dose rates from various sources and geometries; radiation effects on physical systems.

Prerequisites: NUEN 613; MATH 308.**NUEN 613 Principles of Radiological Safety****Credits 3. 3 Lecture Hours.**

Rigorous mathematical and physical approach to various aspects of radiological safety; derivation of equations involving radiation absorption, radiation dosimetry and calculations of radiation dose due to internal emitters; mathematical models relating to radionuclide concentrations in tumor, normal tissue, air or water to whole body dose.

Prerequisite: NUEN 409.**NUEN 614 Probabilistic Risk Assessment Techniques in Nuclear Systems****Credits 3. 3 Lecture Hours.**

Current and proposed techniques for determining the reliability of nuclear plant systems and the risk associated with the operation of these advanced technology systems.

Prerequisites: NUEN 612 and NUEN 613.

NUEN 615 Theory and Applications of Microdosimetry**Credits 3. 3 Lecture Hours.**

Theory, measurement, and calculation of microdosimetric spectra; practical applications of microdosimetry in the determination of absorbed dose distribution within tissue, the statistical fluctuations of absorbed dose at the cellular and subcellular level, and the impact of microdosimetry on radiation protection guidelines.

Prerequisite: NUEN 613.**NUEN 618 Multiphysics Computations in Nuclear Science and Engineering****Credits 3. 3 Lecture Hours.**

Tightly coupled multiphysics simulation techniques and application to typical problems arising in nuclear science and engineering (reactor dynamics and safety transients, conjugate heat transfer, radiative transfer, fluid structure interaction).

Prerequisites: MATH 609 and NUEN 606.**NUEN 623 Nuclear Engineering Heat Transfer and Fluid Flow****Credits 3. 3 Lecture Hours.**

Thermodynamics and unified treatment of mass, momentum and energy transport with applications to nuclear engineering systems; velocity and temperature distributions in laminar and turbulent flow; flow and thermal stability.

Prerequisites: MEEN 334, MATH 346 or MATH 461 and MATH 601 or registration therein or approval of instructor.**NUEN 624 Nuclear Thermal Hydraulics and Stress Analysis****Credits 3. 3 Lecture Hours.**

Unified treatment of advanced heat transport in solids and fluids including boiling phenomena; thermal stress phenomena with applications to nuclear sources; isothermal elasticity; thermoelasticity; viscoelasticity; plasticity.

Prerequisites: NUEN 623 or equivalent; MATH 601 or registration therein.**NUEN 625 Neutron Transport Theory****Credits 4. 4 Lecture Hours.**

Analytical treatment of neutron transport theory; solution methods of integrodifferential and integral Boltzmann equations, adjoints; energy dependent methods using singular eigenfunctions, variational methods, orthogonal polynomials and thermalization; current analytical techniques in transport theory.

Prerequisites: NUEN 606; MATH 602.**NUEN 627 Radiation-Hydrodynamics****Credits 3. 3 Lecture Hours.**

Coupling of the Euler equations of compressible fluid dynamics with the equations of thermal radiation transport; the equilibrium-diffusion limit; radiative shock waves; and numerical methods for one-dimensional calculations.

Prerequisite: MATH 602.**NUEN 629 Numerical Methods in Reactor Analysis****Credits 4. 4 Lecture Hours.**

Solution of variable dimension multigroup discrete representation problems including Sn, Pn, An, variational and Monte Carlo techniques; techniques in reactor kinetics, fuel cycle and optimization.

Prerequisites: NUEN 430; NUEN 606 or equivalent.**NUEN 630 Monte Carlo Methods for Particle Transport****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Principles of Monte Carlo method; random number generation; random variable sampling; particle tracking; statistical error estimation; ACE format cross-sections; introduction to MCNP code; MCNP applied to radiation shielding, criticality safety, reactor physics and detector modeling; MCNP output analysis, statistical tests, and tallying procedures; variance reduction techniques; Monte Carlo algorithm development.

Prerequisites: Approval of Instructor, MCNP/MCNPX code single user license from RSICC, ORNL, USA.**NUEN 633 Radiation Measurements and Calibrations****Credits 3. 3 Lecture Hours.**

Measurement of radiation dose and protection quantities in realistic radiation fields will be studied; specific characteristics of radiation sources will be discussed in the context of accurate measurement and radiation protection; examples from a wide variety of radiation environments will illustrate radiation measurement requirements for medical, industrial, and research sources.

Prerequisite: NUEN 613.**NUEN 640 Severe Accident Analysis of Nuclear Facilities****Credits 3. 3 Lecture Hours.**

Severe accident phenomena from initial fuel heat up to the source term; complexity of accident progression and safety issues; severe accident codes with respect to the modeling philosophy, techniques, assumptions and limitations; development of skills in analysis methodologies/ techniques.

Prerequisite: Graduate classification in the college of engineering or approval of instructor.**NUEN 644/MEEN 644 Numerical Heat Transfer and Fluid Flow****Credits 3. 3 Lecture Hours.**

Convection-diffusion, up-wind, exponential, exact solution, power law schemes, false diffusion; staggered grid concept; development of simple and simpler algorithms; periodically developed flows.

Prerequisites: NUEN 430 or equivalent; MEEN 357 and MEEN 461.**Cross Listing:** MEEN 644/NUEN 644.**NUEN 646 Fundamentals of Space Life Sciences****Credits 3. 3 Lecture Hours.**

Integrates nutrition, physiology, and radiation biology to define major biological problems in long duration space flight; provide an overview of the problems of bone loss, muscle wasting, and radiation-enhanced carcinogenesis along with potential countermeasures; focus on nutritional interventions and exercise protocols.

Cross Listing: NFSC 646 and KINE 646.**NUEN 647 Uncertainty Quantification in Nuclear Science and Engineering****Credits 3. 3 Lecture Hours.**

Predictions of computer codes when the inputs to those codes are uncertain; demonstration on building confidence in computer models and making a qualified prediction.

Prerequisite: Graduate classification or approval of instructor.**NUEN 650 Nuclear Nonproliferation and Arms Control****Credits 3. 3 Lecture Hours.**

Studies the political and technological issues associated with nuclear proliferation and arms control; history of arms control treaties and verification, proliferation resistance in the nuclear fuel cycle, international and domestic safeguards, material accountability, containment and surveillance, and physical protection.

Prerequisite: NUEN 601.

NUEN 651 Nuclear Fuel Cycles and Nuclear Material Safeguards
Credits 3. 3 Lecture Hours.

Study of civilian and military nuclear fuel cycles and application of nuclear material safeguards to secure these cycles; topics include the physics of the fundamental fuel cycle components; the application of nuclear material measurements systems; and the technical and legal basis for material protection, control and accounting systems.

Prerequisite: NUEN 601 or equivalent.

NUEN 656 Critical Analysis of Nuclear Security Data
Credits 4. 4 Lecture Hours.

A project-based course studying the analysis of nuclear security events, threats, and data; assigned project requires an analysis of data for a hypothetical case of interest to U.S. national security; focuses on detailed technical analysis using diverse datasets and country/organization profiles.

Prerequisites: NUEN 650, NUEN 601 or equivalent.

NUEN 657 Emergency Response Dose Assessment
Credits 2. 2 Lecture Hours.

The U.S. Nuclear Emergency Response program; assessment of radiation doses to the public and emergency responders following an event; topics include U.S. response teams, radioecology, U.S. guidelines, dose assessment techniques and useful software packages; capstone exercise simulating a radiological release.

Prerequisites: NUEN 309/SENG 309 or equivalent; Graduate classification.

NUEN 661 Nuclear Fuel Performance
Credits 3. 3 Lecture Hours.

Reviews basic phenomena that govern nuclear fuel performance; includes structural changes and rate controlling phenomena for oxide and metal fuels as well as cladding and other structural materials.

Prerequisites: Graduate classification or consent of the instructor.

NUEN 662 Nuclear Materials Under Extreme Conditions
Credits 3. 3 Lecture Hours.

Fundamentals of materials degradation under reactor environments; linkage from radiation induced microstructure changes to materials thermal properties, mechanical properties, corrosion resistance, swelling, creep, and overall integrities; materials issues of nuclear fuel, cladding, out-core structural components and waste storage managements.

Prerequisite: Graduate classification or approval of instructor.

NUEN 663 Fundamentals of Ion Solid Interactions
Credits 3. 3 Lecture Hours.

Fundamentals of neutron and ion interactions with solid state materials, and subsequent damage cascade formation, defect clustering, and structural changes; electronic stopping and nuclear stopping mechanisms based on classic and quantum mechanics treatments; development of basic modeling capabilities to carry out simulations for relevant research topics.

Prerequisite: Graduate classification or approval of instructor.

NUEN 669/INTA 669 Nuclear Terrorism Threat Assessment and Analysis
Credits 3. 3 Lecture Hours.

Study the manner in which we conduct threat assessments and the analysis of non-state actors in the fields of nuclear and radiological security; examine the history of threats and security issues in an effort to better understand terrorist groupings, their motivations and attack methodologies.

Prerequisite: Graduate classification.

Cross Listing: INTA 669/NUEN 669.

NUEN 670 Introduction to Radiotherapy Physics
Credits 4. 3 Lecture Hours. 4 Lab Hours.

Examination of radiation physics necessary for understanding modern radiation therapy; perform theoretical foundations of physical dose calculation for megavoltage energy photons and electrons, biological predictions of therapy outcomes, and brachytherapy; methods of modeling and implementing radiation therapy treatment includes planning, evaluation, and delivery; emphasis on intensity modulated radiation therapy and TomoTherapy.

Prerequisites: Graduate classification; NUEN 613 or approval from academic advisor.

NUEN 673 Radiation Biology
Credits 3. 3 Lecture Hours.

Response of biological systems to ionizing radiation at the molecular, cellular, tissue and organismal levels; effects of different doses and dose rates with emphasis on the underlying mechanisms relevant to accidental, environmental and medical exposures.

Prerequisite: NUEN 409 or graduate classification.

NUEN 674 Radiation Carcinogenesis
Credits 3. 3 Lecture Hours.

Examines the experimental models and mathematical simulations for the investigation of radiation-induced cancer, the current scientific literature concerning the intersection of risk analysis and the interpretation of disparate data from varied biological systems.

Prerequisite: Graduate classification.

NUEN 675 Internal Dose Techniques
Credits 3. 3 Lecture Hours.

Current and proposed techniques for assessing the absorbed dose due to internally deposited radionuclides; techniques recommended for international and national bodies, as well as those used in nuclear medicine.

Prerequisites: NUEN 612 and NUEN 613.

NUEN 676 Radiation Physics Instrumentation
Credits 3. 1 Lecture Hour. 6 Lab Hours.

Advanced course in instrumentation intended for radiation professionals and researchers; provides an in-depth knowledge of the components of radiation monitoring and measurement systems; includes quality assurance and quality control concepts for the safe and efficient use of radiation sources.

Prerequisite: NUEN 402.

NUEN 677 Aerosol Science
Credits 3. 3 Lecture Hours.

Multidisciplinary survey of methods for describing aerosol particles and systems: gas kinetics and transport theory, formation and growth thermodynamics, electrical properties, coagulation, light scattering; selected topics from current literature.

Prerequisite: Graduate classification in engineering or approval of instructor.

NUEN 678 Waste Management in the Nuclear Industry
Credits 3. 3 Lecture Hours.

Management of radioactive, hazardous and mixed waste generated by all segments of the nuclear fuel cycle and users of radioisotopes; includes treatment, storage and disposal technologies and the political and socioeconomic issues; evaluation of current practices and regulations using a holistic approach.

Prerequisites: Graduate classification and approval of instructor.

NUEN 681 Seminar**Credit 1. 1 Lecture Hour.**

Topics in nuclear engineering and health/medical physics not covered by formal coursework; whenever possible, guest lectures will discuss topics which they have personally investigated.

Prerequisite: Graduate classification.**NUEN 684 Professional Internship****Credits 1 to 6. 1 to 6 Other Hours.**

Training under the supervision of practitioners in settings appropriate to the student's professional objectives.

Prerequisites: Approval of chair of student's advisory committee and department head.**NUEN 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Offered to enable students to undertake and complete limited investigations not within their thesis research and not covered by any other courses in curriculum.

Prerequisite: Graduate classification.**NUEN 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of nuclear engineering. May be repeated for credit.

Prerequisite: Approval of instructor.**NUEN 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research toward thesis or dissertation.

NURS - Nursing

NURS 601/FORS 601 Foundations of Forensic Healthcare**Credits 2. 2 Lecture Hours.**

Legal, ethical, clinical and advocacy responsibilities of responders and providers; forensic medical terminology; mechanisms of injury and death; identification of intentional and non-intentional wounds; scientific and medico-legal investigation of suspicious injury and death; introduction to written and photographic documentation of findings; judicial system overview.

Prerequisite: Graduate classification.**Cross Listing:** FORS 601/NURS 601.**NURS 602/FORS 602 Victimology: Clinical Implications and Applications****Credits 3. 3 Lecture Hours.**

Comprehensive examination of human responses to victimization resulting in physical and psychological trauma; interpersonal violence as a public health issue; overview of intentional injury, neglect, abuse and exploitation throughout the lifespan; process of seeking justice for victims; characteristics and motivational issues related to perpetrators of violence; transitioning patterns from role of victim to survivor including secondary effects of victimization; theoretical and evidence-based approaches to assessment; documentation of victims and perpetrators of violence.

Prerequisites: Graduate classification; grade of B or better in NURS 601/ FORS 601 or FORS 601/NURS 601, or approval of instructor.**Cross Listing:** FORS 602/NURS 602.**NURS 603/FORS 603 Impact of Violence Across the Lifespan****Credits 3. 3 Lecture Hours.**

In-depth analysis of the role of the multidisciplinary team within the criminal and civil court systems; critical collaboration between representatives of the health care system, investigative systems and the legal system in seeking justice for victims of violence; civil investigative processes involving trauma, injury and death; methods of evidence collection and preservation; public health perspective of interpersonal violence and prevention; social-ecological model of primary prevention; factors placing individuals at risk for violence; batterer/anti-bullying intervention programs.

Prerequisites: Grade of B or better in NURS 601/FORS 601 or FORS 601/ NURS 601, or approval of instructor.**Cross Listing:** FORS 603/NURS 603.**NURS 604/FORS 604 Forensic Investigation of Injury****Credits 2. 2 Lecture Hours. 1 Lab Hour.**

Injury pathology, across the lifespan; classifications and mechanisms of injury; intentional and unintentional injuries; physiology of wound healing; documentation of injury.

Prerequisites: Grade of B or better in NURS 601/FORS 601 or FORS 601/ NURS 601, or approval of instructor.**Cross Listing:** FORS 604/NURS 604.**NURS 610/FORS 610 Forensic Sexual Assault Examiner****Credits 3. 3 Lecture Hours.**

Roles and responsibilities; legal definitions; expert witness testimony; nurse advocacy; motivations of perpetrators to offend; obtaining historical account of sexual assault using interview techniques; appropriate methods of documentation; EMTALA; head-to-toe assessment; injury documentation; anatomy of female and male sexual organs; evidence collection kit; treatment of STDs; pregnancy prophylactic treatment; role of advocates and advocacy centers; communication skills; vicarious victimization; civil and criminal trial procedures.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/ NURS 601, or approval of instructor.**Cross Listing:** FORS 610/NURS 610.**NURS 611/FORS 611 Application of Clinical Pharmacology to Victims of Violence****Credit 1. 1 Lecture Hour.**

Common substances of abuse; substance abuse and crimes against persons; drug laws and enforcement; drug facilitated crimes; pharmacological prophylaxis.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/ NURS 601, or approval of instructor.**Cross Listing:** FORS 611/NURS 611.**NURS 612/FORS 612 Human Trafficking****Credit 1. 1 Lecture Hour.**

Forms of trafficking; Trafficking Victims Protection Act; grooming of victims; perpetrator attributes; involuntary servitude, peonage, debt bondage; trafficking versus human smuggling; recruitment and transportation of victims; bio-psycho-social impact; human trafficking and the internet; identification and investigation of trafficked individuals; trafficking in the U.S. and world-wide.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/ NURS 601, or approval of instructor.**Cross Listing:** FORS 612/NURS 612.

NURS 613/FORS 613 Forensic Photography**Credit 1. 1 Lecture Hour.**

Fundamentals of photographic documentation of injuries sustained during a crime; camera and equipment selection; camera skills; forensic photography techniques; supporting documentation; data management; victim rights.

Prerequisite: Graduate classification.**Cross Listing:** FORS 613/NURS 613.**NURS 614/FORS 614 Policy and Ethics of Interpersonal Violence****Credit 1. 1 Lecture Hour.**

Overview of policies and ethical considerations that inform forensic healthcare practice and procedures; identification, discussion and analysis of federal, state and local policies; regulation of professional practice; scopes and standards of practice; policy and legislation regarding victim populations; ethical standards for health professionals working with victims.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.**Cross Listing:** FORS 614/NURS 614.**NURS 615/FORS 615 Forensic Mental Health****Credit 1. 1 Lecture Hour.**

Mental health issues related to victimization and perpetration; forensic mental health professional roles; diminished capacity and competence to stand trial; addiction and crime; current issues in forensic mental health.

Prerequisite: Grade of B or better in NURS 601/FORS 601 or FORS 601/NURS 601, or approval of instructor.**Cross Listing:** FORS 615/NURS 615.**NURS 617 Advanced Pathophysiology****Credits 3. 3 Lecture Hours.**

Utilization of advanced concepts of pathophysiology in health problems across the life span; diagnostic reasoning applied to common health complaints for differential diagnosis.

Prerequisites: Graduate classification.**NURS 618 Advanced Pharmacology****Credits 3. 3 Lecture Hours.**

Describe, administer, and counsel patients regarding appropriate and safe medication regimens; basic pharmacologic principles, pharmacologic actions, and application of major drug classifications in relation to physiologic systems.

Prerequisite: NURS 617.**NURS 620 Advanced Practice Nursing Roles****Credits 3. 3 Lecture Hours.**

Role analysis and synthesis; professional responsibilities of the advanced practice nurse; historical overview of advanced practice nursing.

Prerequisite: NURS 656/HCPI 656 or concurrent enrollment.**NURS 621 Diagnostics and Procedures****Credits 2. 2 Lecture Hours.**

Knowledge and skill development of common procedures and diagnostics in primary care; role of the family nurse practitioner related to common procedures and diagnostics; collaborative, ethical and regulatory considerations.

Prerequisites: NURS 653 or concurrent enrollment.**NURS 622 Primary Care of Families I****Credits 6. 3 Lecture Hours. 9 Lab Hours.**

Advanced knowledge of acute and chronic health problems in primary care; epidemiology, pathology, assessment, diagnosis, therapeutic modalities and evaluation for identified conditions; role of the family nurse practitioner in health promotion and disease prevention among adults.

Prerequisites: NURS 617, NURS 618 and NURS 653.**NURS 623 Primary Care of Families II****Credits 6. 3 Lecture Hours. 3 to 9 Lab Hours.**

Advanced knowledge of acute and chronic health problems in primary care; epidemiology, pathology, assessment, diagnosis, therapeutic modalities and evaluation for identified conditions; role of the family nurse practitioner in health promotion and disease prevention among women and children.

Prerequisite: NURS 622.**NURS 624 Primary Care of Families III****Credits 6. 3 Lecture Hours. 9 Lab Hours.**

Advanced knowledge of acute and chronic health problems in primary care; epidemiology, pathology, assessment, diagnosis, therapeutic modalities and evaluation for identified conditions; role of the family nurse practitioner in health promotion and disease prevention among adults and older adults.

Prerequisite: NURS 622.**NURS 625 Primary Care of Families Practicum****Credits 4. 12 Other Hours.**

Culmination and integration of all previous course work; transition into practice; clinical immersion opportunity; fulfillment of domains and competencies of family nurse practitioner.

Prerequisites: NURS 620 or concurrent enrollment, NURS 623 or NURS 624.**NURS 630 Teaching and Learning Theory****Credit 1. 1 Lecture Hour.**

Teaching and learning theories; impact on curriculum design relevant to the health sciences educator; research, theories and practices foundational to classroom, simulation and clinical learning.

Prerequisite: Graduate classification.**NURS 631/EDHP 631 Curriculum Foundations for Health Care Professionals****Credits 3. 3 Lecture Hours.**

Models of curriculum development and design based on educational philosophy and professional standards; scope and sequence, curriculum alignment, curriculum mapping; program development through generation of content outlines, objectives, and assessments.

Prerequisite: Graduate classification.**Cross Listing:** EDHP 631/NURS 631.**NURS 632/EDHP 632 Assessment and Evaluation for Healthcare Professionals****Credits 3. 3 Lecture Hours.**

Practical and theoretical issues involved in evaluating student performance, teacher performance and educational programs; performance-based assessments applicable to didactic, simulated and clinical learning environments; assessment instruments and strategies in summative and formative evaluation processes; develop, execute and interpret educational assessments and evaluation methods.

Prerequisite: EDHP 631/NURS 631 or NURS 631/EDHP 631.**Cross Listing:** EDHP 632/NURS 632.

NURS 633/EDHP 633 Teaching Strategies for Health Care Professionals
Credits 3. 3 Lecture Hours.

Best practices research on instructional pedagogy and adult learning; principles, concepts and theories used in practice that create effective learning environments; teaching strategies responsive to diverse learning styles and needs of learners; reflective practices and self-assessment; practical classroom, simulation and clinical teaching strategies consistent with current evidence; teaching methods using technology.

Prerequisites: EDHP 631/NURS 631 or NURS 631/EDHP 631; EDHP 632/NURS 632 or NURS 632/EDHP 632.

Cross Listing: EDHP 633/NURS 633.

NURS 634 Teaching Practicum

Credits 2. 2 Lab Hours.

Synthesis of educational knowledge; actualize the faculty role; implement effective teaching strategies in content/curriculum development, test construction and clinical supervision in a variety of settings; inter-professional evidenced-based collaborative teaching strategies promoting critical thinking, scholarship and innovation.

Prerequisites: EDHP 631/NURS 631 or NURS 631/EDHP 631, EDHP 632/NURS 632 or NURS 632/EDHP 632, and EDHP 633/NURS 633 or NURS 633/EDHP 633.

NURS 638 Advanced Clinical Practicum and Project

Credits 3. 3 Other Hours.

Development of advanced clinical proficiency with a population of interest or professional role using direct and indirect care approaches; development and implementation of a plan to improve patient outcomes utilizing a variety of advanced skills and knowledge, including health promotion/illness management, quality improvement, health care finance, leadership, policy, evidence-based practice, informatics.

Prerequisites: Grade of B or better in NURS 617, NURS 618, NURS 632/EDHP 632, NURS 652/HCPI 652, NURS 653, and NURS 654.

NURS 651/HCPI 651 Healthcare Quality Improvement and Informatics

Credits 3. 3 Lecture Hours.

Overview of health care from the viewpoint of quality improvement and health care informatics; uses the science of quality measurement and improvement in conjunction with information science to propose a quality improvement initiative; legal and ethical implications of current trends in information technology and safety.

Prerequisite: Graduate classification.

Cross Listing: HCPI 651/NURS 651.

NURS 652/HCPI 652 Scholarship: Integration and Application

Credits 3. 3 Lecture Hours.

Integrates theory, evidence, clinical judgment, research and interprofessional perspectives using translational processes to improve patient outcomes; application of available evidence to interdisciplinary clinical practice; identification of gaps in knowledge; development of a spirit of inquiry and lifelong scholarship.

Prerequisite: Graduate classification.

Cross Listing: HCPI 652/NURS 652.

NURS 653 Advanced Health Assessment

Credits 3. 2 Lecture Hours. 3 Lab Hours.

Advanced assessment techniques and skills; comprehensive and holistic assessment and evaluation of patients across lifespan; recognizing normal findings, common variations of normal findings and pathologic assessment findings.

Prerequisite: Graduate Classification.

NURS 654 Clinical Prevention and Population Health

Credits 3. 3 Lecture Hours.

Develop leadership skills in the design of clinical prevention interventions and population based care that promotes health and reduces the risk of chronic illness and disease; plan care responsive to unique cultural and ethnic identities, socioeconomic conditions and the needs and values of individuals and populations.

Prerequisite: Graduate classification.

NURS 656/HCPI 656 Leadership and Health Policy II

Credits 3. 3 Lecture Hours.

Development of skills essential to leadership and policy processes, including communication, collaboration, negotiation, delegation and coordination by applying systems theory and complexity science will be promoted; preparation to assume a leadership role in the management and evaluation of human, fiscal and physical health resources; develop skills in political efficacy and the ability to improve the systems and population outcomes through the development of health policy.

Prerequisite: Graduate classification.

Cross Listing: HCPI 656/NURS 656.

NURS 689 Special Topics In...

Credits 1 to 4. 1 to 4 Other Hours.

Selected topics in an identified area of nursing. May be taken two times for credit.

OBGY - Obstetrics & Gynecology

OBGY 800 Obstetrics and Gynecology Clerkship

Credits 1.25 to 15. 1.25 to 15 Other Hours.

25 to 15. Introductory experience in the practice of obstetrics and gynecology.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

OBGY 801 Obstetrics and Gynecology

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This elective will strive to: Introduce students to the ambulatory setting of Obstetrics and Gynecology in a private practice setting. Reinforce and review the student's basic fund of knowledge in Obstetrics and Gynecology. Introduce the student to gynecological surgery by observation and participating as a first assistant in this practice. Familiarize the student with preventative medicine in Obstetrics and Gynecology.

OBGY 802 Obstetrics and Gynecology

Credits 1.25 to 10. 1.25 to 10 Other Hours.

This course offers a general obstetrics-gynecology experience in the context of a private practice. Working with one or more faculty, the student will see peri-partum patients, well-woman exams, peri-operative patients in a clinic setting. Hospital rounds and assisting in patient deliveries, including C/Sections and Gyn Surgery, are expected.

OBGY 803 Gynecologic Oncology

Credits 1.25 to 10. 1.25 to 10 Other Hours.

The elective in Gynecologic Oncology will expose fourth year medical students to the comprehensive treatment of patients with gynecologic malignancies in the operating room, on the hospital wards, and in the office settings.

OBGY 804 Maternal-Fetal Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will introduce the student to high-risk pregnancy setting. The student's educational experience will be furthered in the clinical care of patients with high risk pregnancies. The course will serve to improve the clinical acumen of students in managing the high-risk obstetrical patient, and introduce the student to advanced technologies in the monitoring of the high-risk pregnancy.

OBGY 805 Reproductive Endocrinology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

This course will allow the student to develop a knowledge of and competency in the care of the patient with endocrine and infertility problems. This will include a knowledge of basic endocrine physiology including: the CNS and hypothalamic pituitary system, biosynthesis, metabolism, physiology and pharmacology of steroid hormones, gonadotropins, releasing factors, and other substances that regulate the reproductive system, endocrine dynamics in pregnancy and the menstrual cycle, thyroid-adrenal physiology and general metabolism relating to reproduction, physiology of conception and the reproductive tract related to fertility and reproduction, as well as general endocrinologic principles.

OBGY 806 Obstetrics and Gynecology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The faculty will strive to introduce students to the ambulatory setting of Obstetrics and Gynecology in a private practice setting; reinforce and review the student's basic fund of knowledge in Obstetrics and Gynecology; introduce the student to gynecological surgery by observation and participating as a first assistant in this practice; and familiarize the student with preventative medicine in Obstetrics and Gynecology.

OBGY 807 Clinical Research - OB/GYN**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The faculty will strive to assist the student with identifying an appropriate translational research project in obstetrics, gynecology, or reproductive biology that realistically can be completed within the available time; provide direction in organizing the essential elements of research to assure successful completion of the project; introduce the student to principles of study design, data collection, data management and analysis, and manuscript preparation; provide insight into specific issues related to translational research in Obstetrics and Gynecology, including potential sources of bias and ethical considerations important to human research; and provide an opportunity to learn the ropes of professional proposal and manuscript preparation, review, and submission for publication.

OBGY 808 Maternal - Fetal Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

The faculty will strive to introduce student to the management of high-risk pregnancies; further the educational experience in the clinical care of patients with complex pregnancies; improve the clinical acumen of students in managing perinatal complications; introduce student to technology/monitoring high-risk pregnancy.

OBGY 809 Obstetrics and Gynecology Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Further the educational experience in the clinical care of patients with obstetric and gynecologic disorders and improve the clinical acumen in recognizing and managing the problems of these patients; encourage enhancing educational base and to make decisions about the care of patients with OB/GYN problems; broad experience in OB/GYN for continued evaluation of career decisions.

OBGY 810 Reproductive Endocrinology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

Knowledge of and competence to care for endocrine and infertility problems; a knowledge of basic endocrine physiology including: the CNS and hypothalamic pituitary system, biosynthesis, metabolism, physiology and pharmacology of steroid hormones, gonadotropins, releasing factors, and other substances that regulate the reproductive system; endocrine dynamics in pregnancy and the menstrual cycle; thyroid adrenal physiology and general metabolism relating to reproduction; physiology of conception and the reproductive tract related to fertility and reproduction; and general endocrinological principles.

OBGY 985 Off Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

OBGY 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

This is an on-campus opportunity in the department of Obstetrics and Gynecology in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

OBIO - Oral Biology

OBIO 601 Cellular and Molecular Biology**Credits 2 to 3. 2 to 3 Lecture Hours.**

Intermediary metabolism of protein, protein synthesis, nucleic acid metabolism and biochemical endocrinology; offered fall semester.

Prerequisite: none.**OBIO 602 General Histology****Credits 3. 3 Lab Hours.**

General histology and microscopic anatomy of the four basic tissues. Laboratory study of electron micrographs and prepared slides is employed; offered fall semester.

OBIO 603 Gross Anatomy**Credits 4. 4 Lab Hours.**

Conceptual and functional basis for understanding macroscopic structure of the human body utilizing laboratory dissection of human cadavers; regional anatomy of the back, thorax, upper limb and head is emphasized; offered fall semester.

OBIO 604 Neuroscience**Credits 2. 1 Lecture Hour. 1 Lab Hour.**

Lectures and laboratory sessions on gross and microscopic anatomy of the human central and peripheral nervous system; neurophysiology of the central nervous system, peripheral nerves, special sense, autonomic and clinical mediation; offered spring semester.

OBIO 605 Mammalian Physiology**Credits 4 to 5. 4 to 5 Lab Hours.**

Basic physiology principles of cells, muscle, nerve, blood, heart, circulation, respiration, digestion, excretion and central nervous system in maintaining homeostasis; classical laboratory experiments are used to demonstrate these principles; offered spring semester.

OBIO 606 Oral Histology**Credits 3. 3 Lecture Hours.**

Origin and development of the dental tissues and their related structures; current publications and research reports are used to provide the opportunity to investigate some phase of active interest to them and their anticipated future interest in practice; offered spring semester.

OBIO 607 Microbiology**Credits 3. 3 Lecture Hours.**

Introduction to basic microbiology with emphasis on oral and medical microbes, taxonomy and microbial physiology; taught in conjunction with dental curriculum; additional readings and discussions for graduate students; offered fall and spring semesters.

OBIO 608 Introduction to Evidence-Based Dentistry and Clinical Research
Credits 3. 3 Lecture Hours.

A year-long course for graduate students consisting of lecture sessions, small group discussions, and seminars; progress grade will be given at the end of the first semester followed by a final grade of record at the end of the year; provide dental scientists and dentists-in-training with the knowledge and tools to take advantage of constantly increasing knowledge in clinical, material, and basic biomedical sciences; taught in conjunction with dental curriculum; additional readings and discussions for graduate students; not available for distance learning.

OBIO 610 Responsible Conduct in Biomedical Research**Credit 1. 1 Lecture Hour.**

A survey of topics required for research; utilizes outside reading assignments, online modules, class presentation and discussion of cases associated with topic; offered spring semester of odd years.

OBIO 611 Research Design and Methodology**Credits 2. 2 Lecture Hours.**

An introduction to the research process; sufficient background in research design and methodology is provided to enable students to critically evaluate literature and assist in the formulation of research projects; includes discussion of rules and regulations for human and animal research; offered fall semester.

OBIO 612 Seminar: Current Issues in Science**Credit 1. 1 Other Hour.**

Guest lectures, workshop lectures and discussions include topics of current interest to program faculty and students and of general interest in the biomedical sciences; offered fall and spring semesters.

OBIO 613 Interactive Writing and Grant Proposals**Credit 1. 1 Lecture Hour.**

Interactive writing, produce National Institutes of Health (NIH) formatted grant.

Prerequisites: Admission to MS or PhD in Oral Biology.

OBIO 621 Applied Biostatistics**Credits 2. 2 Lecture Hours.**

Overview of applied biostatistics with an emphasis on oral health research; training includes computer-based instruction in data analysis using SPSS; offered spring semester.

OBIO 622 Advanced Biostatistics**Credits 2. 2 Lecture Hours.**

Advanced biostatistical methods, including multivariate and longitudinal analysis, computer simulations, and applications in craniofacial biology.

Prerequisites: OBIO 621 or equivalent.

OBIO 630 Growth and Mechanisms of Development**Credits 0 to 2. 0 to 2 Lecture Hours.**

Normal prenatal growth and development; patterns and mechanisms of growth and maturation; offered fall semester.

OBIO 631 Advanced Craniofacial Development and Craniofacial Anomalies**Credits 1 to 10. 1 to 10 Lecture Hours.**

Detailed investigation of the basic processes and mechanisms of postnatal growth and adaptation of the craniofacial region; emphasis on the areas of controversy surrounding current understanding of the factors influencing postnatal craniofacial growth and form; adaptive capabilities of growth and form; adaptive capabilities of craniofacial tissues; effect of altered function on craniofacial growth and form; influence of treatment on craniofacial growth and form; theories of craniofacial growth; offered fall semester.

OBIO 632 Physical Growth and Maturation**Credits 0.50 to 2. 0.50 to 2 Lecture Hours.**

Pattern and mechanisms of postnatal growth and maturation; offered spring semester.

OBIO 633 Microscopy**Credits 2. 2 Lecture Hours.**

Principles and methods of scanning electron microscopy; technical instruction includes tissue preparation and equipment maintenance; usage of scanning electron, light, fluorescent and confocal microscopes and computer imaging techniques; offered spring semester.

OBIO 634 Nanobiomaterials and Regenerative Medicine**Credit 1. 1 Lecture Hour.**

State-of-the-art knowledge of nanobiomaterials and regenerative medicine; topics include nanobiomaterials design, syntheses and preparation, nanobiotechnology for scaffold fabrication, surface functionality of nanobiomaterials, nanobiomaterials for drug and gene delivery, stem cell and nanobiomaterials, and the applications of nanobiomaterials for various tissue regeneration (bone, cartilage, tooth, et. al.).

OBIO 640 Cellular and Molecular Biology of Oral Craniofacial Tissues I**Credits 1 to 10. 1 to 10 Lecture Hours.**

A general survey intended to provide background information concerning the methods and theory of modern cellular/molecular biology; lays the groundwork for more advanced study, aids those interested in incorporating cellular/molecular approaches into their research work, and enables one to read, understand and evaluate current scientific literature; offered spring semester.

Prerequisites: OBIO 601 or equivalent.

OBIO 641 Cellular and Molecular Biology of Oral Craniofacial Tissues II**Credits 1 to 10. 1 to 10 Lecture Hours.**

Processes of epithelial-mesenchymal interaction as related to odontogenesis, amelogenesis, dentinogenesis, collagen formation, intracellular and extracellular calcium homeostasis, plaque and calculus, and wound healing; offered spring semester.

OBIO 642 Techniques in Cell and Molecular Biology**Credit 1. 1 Lecture Hour.**

Principal methods of cellular/molecular investigation of proteins and nucleic acids including immunocytochemistry, western blotting, northern/southern blotting, radioimmunoassay, in situ hybridization, polymerase chain reaction, intracellular recording, and fluorescence confocal microscopy; offered summer semester.

Prerequisite: OBIO 640 or equivalent.

OBIO 643 Advanced Biology of Mineralized Tissues**Credits 2. 2 Lecture Hours.**

Overview of the advanced biology of mineralized tissues and their roles in oral health and disease; basic molecular biology of teeth and the skeleton including bone, cartilage, and other aspects of systemic biology; offered fall semester.

OBIO 644 Evolutionary and Functional Morphology**Credit 1. 1 Lecture Hour.**

Comparative anatomy and evolution of craniofacial structure with emphasis on current techniques of electrophysiology, kinesiology, and musculoskeletal biomechanics of orofacial function; offered fall semester.

OBIO 645 Seminar: Current Issues in Bone and Mineralized Tissue Biology**Credit 1. 1 Other Hour.**

Topics of current importance in bone and mineralized tissue biology; offered fall and spring semesters.

OBIO 651 Sensory Neurobiology and Pain**Credit 1. 1 Lecture Hour.**

An overview of the various sensory systems is explored with the primary emphasis on the processing of pain and temperature information from the craniofacial complex; offered summer semester of odd years.

OBIO 652 Advanced Neuroscience**Credit 1. 1 Lecture Hour.**

Advanced concepts of neuroscience are presented with an in-depth coverage of membrane and system function.

Prerequisite: OBIO 604 or equivalent.

OBIO 660 Teaching Skills for Health Professions Educators**Credit 1. 1 Other Hour.**

Provides an overview of teaching principles and methods; geared toward the special needs of the health profession educator; materials are presented; active involvement in exercises concerned with all aspects of the teaching/learning process; seminar and workshop format.

OBIO 661 Teaching Practicum in Applied Biostatistics**Credits 1 to 4. 1 to 4 Other Hours.**

Advanced practicum designed to engage all aspects of teaching applied biostatistics; learn how to present biostatistics that health professions graduate students can master; includes applying statistical concepts and methods to one's own research and to that published in the professional literature; learn about the creation and evaluation of fair assessments of student performance including tests, projects, grading, etc; not available for distance learning.

Prerequisite: OBIO 621.

OBIO 662 Teaching Practicum in Gross Anatomy**Credits 3. 3 Lab Hours.**

Assist with laboratory dissection of human cadavers; lead class study groups and prepare pro-sections for the D1 class; regional anatomy of the back, thorax, upper limb and head is emphasized; taught in conjunction with dental curriculum; additional readings and exercises are designed to instruct graduate students in how to teach the subject.

OBIO 670 Clinical Pharmacology**Credit 1.5. 1.5 Other Hour.**

Selection and evaluation of dentally-related drugs and review of current literature; seminar format; limited to clinical specialty students; offered fall semester.

OBIO 671 Applied Medical Physiology**Credits 2. 1 Lecture Hour. 1 Lab Hour.**

Basic physiology of the cardiovascular, respiratory and renal systems; each area is expanded to include physiology problems seen clinically as they relate to the dental intern; offered summer semester.

Prerequisite: OBIO 605 or equivalent.

OBIO 672 Head and Neck Anatomy**Credits 1 to 1.5. 1 to 1.5 Lab Hours.**

Special emphasis on surgical anatomy and distribution of nerves and vasculature of particular interest in the field of dentistry; offered summer semester.

OBIO 673 Oral Microbiology**Credits 2 to 3. 2 to 3 Lecture Hours.**

The environment of the mouth is described and its relation to the endogenous and exogenous oral microbiota; relationship between disease and bacterial species; discussion of species differences; molecular mechanisms of bacterial pathogenesis; host response to oral microbes; offered spring semester.

Prerequisites: OBIO 607 or equivalent.

OBIO 674 Immunology**Credits 1 to 2. 1 to 2 Lecture Hours.**

Update on the principles of immunology with an emphasis on oral aspects and related diseases; offered fall semester.

OBIO 675 Current Topics in Biomedical Sciences I**Credits 0 to 10. 0 to 10 Other Hours.**

Reading and discussion of current literature pertinent to topic of seminar; presentation of papers on selected topics is required; may be used for multiple courses in any one semester; offered fall, spring and summer semesters.

OBIO 676 Current Topics in Biomedical Sciences II**Credits 0 to 10. 0 to 10 Other Hours.**

Reading and discussion of current literature pertinent to topic of seminar; presentation of papers on selected topics is required; may be used for multiple courses in any one semester; offered fall, spring and summer semesters.

OBIO 677 Directed Readings I**Credits 0 to 10. 0 to 10 Other Hours.**

Individualized courses for single students involve in-depth study of specific topics in the biomedical sciences.

OBIO 678 Directed Readings II**Credits 0 to 10. 0 to 10 Other Hours.**

Individualized courses for single students involve in-depth study of specific topics in the biomedical sciences.

OBIO 679 Directed Readings III**Credits 0 to 10. 0 to 10 Other Hours.**

Individualized courses for single students involve in-depth study of specific topics in the biomedical sciences.

OBIO 687 Research and Special Problems I**Credits 0 to 10. 0 to 10 Other Hours.**

Concentrated investigation in any area of biomedical sciences; may be used for individualized laboratory rotations or research.

OBIO 688 Research and Special Problems II**Credits 0 to 10. 0 to 10 Other Hours.**

Concentrated investigation in any area of biomedical sciences; may be used for individualized laboratory rotations or research.

OBIO 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of oral biology. May be repeated for credit.

OBIO 691 Research**Credits 0 to 10. 0 to 10 Other Hours.**

Original research on a problem related to oral biology as partial fulfillment of the degree requirements; search literature, establish a research problem, prepare a research proposal, have it approved by thesis committee, conduct necessary experimental and control procedures to test the established hypothesis, analyze the data and write thesis.

OCEN - Ocean Engineering

OCEN 630 Dynamics of Ocean Vehicles**Credits 3. 3 Lecture Hours.**

Dynamics and stability of motion of immersed and floating structures and ocean vehicles; maneuverability and control; behavior of ocean vehicles and stationary platforms in waves. Design considerations leading to motion reduction; applications to surface vessels, submersibles and drilling rigs.

Prerequisites: CVEN 311/EVEN 311, MEEN 459 or equivalent, or approval of instructor.

OCEN 671 Ocean Wave Mechanics**Credits 3. 3 Lecture Hours.**

Wave theory and applications to engineering problems; linear and non-linear theories of regular gravity waves; wave properties and transformation in shoaling water; spectral analysis of irregular waves; forecasting, hindcasting and theoretical spectra.

Prerequisite: CVEN 311/EVEN 311 or equivalent.

OCEN 672 Coastal Engineering**Credits 3. 3 Lecture Hours.**

Effects of waves on coastal structures; design of seawalls breakwaters, jetties, harbors, ship channels and pipelines; intentional and accidental discharge of pollutants; diffusion and spreading; oil spill containment and collection.

Prerequisite: OCEN 671.

OCEN 673 Nonlinear Hydrodynamic Problems in Ocean Engineering**Credits 3. 3 Lecture Hours.**

Nonlinear hydrodynamic problems involved with the complex offshore structures in high sea environment; nonlinear waves application of Volterra model to weakly nonlinear systems; generation of nonlinear model waves; nonlinear hydrodynamic interaction between waves and structure; dynamic analysis of nonlinear response of integrated offshore structures.

Prerequisites: OCEN 671 and OCEN 678.

OCEN 674 Ports and Harbors**Credits 3. 3 Lecture Hours.**

Basic port planning including site selection, environmental factors and economic conditions; design of wharves, quays, jetties, breakwaters, terminals, navigational channels and fenders; harbor sedimentation and maintenance dredging; design of fishing, small craft and recreation boat harbors.

Prerequisite: Approval of instructor.

OCEN 675 Nonlinear Wave Dynamics**Credits 3. 3 Lecture Hours.**

Nonlinear wave-wave interactions in steep ocean waves significantly affect wave properties and long-term wave evolution. Strong and weak wave interactions and their respective effects on waves are studied, using various perturbation methods. Applications are shown through using Hybrid Wave Models to analyze wave measurements and predict wave loads on structures.

Prerequisite: OCEN 671.

OCEN 676 Dynamics of Offshore Structures**Credits 3. 3 Lecture Hours.**

Review of concepts of linear structural dynamic analysis for time and frequency domain simulations, functional design of off-shore platforms, pipelines, floating structures and moorings; environmental loading problems; hydrodynamic phenomena including wind and current interaction, vortex shedding and wave forces; structure-fluid interaction models.

Prerequisites: OCEN 671 or approval of the instructor.

OCEN 677 Environmental Fluid Mechanics**Credits 3. 3 Lecture Hours.**

Introduction to fluid and mass transport in naturally occurring flows; topics include molecular and turbulent diffusion; dispersion; river, estuary, and ocean mixing; dissolution boundary layers; tidal mixing; offshore wastewater outfalls; introduction to environmental quality numerical modeling.

Prerequisite: CVEN 311/EVEN 311 or equivalent.

OCEN 678 Fluid Dynamics for Ocean and Environmental Engineering**Credits 3. 3 Lecture Hours.**

General conservation laws; Navier-Stokes equations; steady and unsteady Bernoulli's equation; potential flow theory and basics of panel methods; laminar and turbulent boundary layer; dispersion and diffusion processes in laminar and turbulent flow; flow past a body of any shape.

Prerequisite: CVEN 311/EVEN 311 or equivalent.

OCEN 681 Seminar**Credits 0-1. 0-1 Other Hours.**

Reports and discussion of current research and selected published technical articles.

OCEN 682 Coastal Sediment Processes**Credits 3. 3 Lecture Hours.**

Sediment properties and size distribution, fluvial sediment transport equations, movement of material by the sea, review of pertinent wave theories, littoral drift, inlet stability, coastal protection structures, similarity in sediment transport, movable bed models, sediment tracing, Aeolian sand transport, case studies.

Prerequisite: OCEN 671 or approval of instructor.

OCEN 683 Estuary Hydrodynamics**Credits 3. 3 Lecture Hours.**

Development of applicable equations for tidal dynamics applied to real estuaries; technology for determination of mean velocities, circulation patterns, water depths, turbulent dispersion patterns, etc. for solution of environmental problems in estuaries; physical and mathematical models.

Prerequisites: OCEN 678 or approval of instructor.

OCEN 684 Professional Internship**Credits 1 to 3. 1 to 3 Other Hours.**

Ocean Engineering research and design experience at government or industry facilities away from the Texas A&M campus; project supervised jointly by faculty and personnel at these locations; projects selected to match student's major. May be taken three times for credit.

Prerequisites: Graduate classification and approval of committee chair and department head.

OCEN 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Special topics not within scope of thesis research and not covered by other formal courses.

OCEN 688 Marine Dredging**Credits 3. 3 Lecture Hours.**

Dredge pump selection; pump and system characteristics; cavitation; types of dredges; continental shelf and deep-ocean dredging; head loss in horizontal and vertical pipes for two and three-phase flow; design of disposal methods for dredged material; environmental effects of dredging.

Prerequisite: Approval of instructor.**OCEN 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of ocean engineering. May be repeated for credit.

OCEN 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

OCNG - Oceanography

OCNG 600 Survey of Oceanography**Credits 3. 3 Lecture Hours.**

General survey of the scientific framework of oceanographic study; applications of ocean research to social and economic problems; interrelations between the ocean disciplines and other fields of study.

Prerequisite: Approval of instructor.**OCNG 603 Communicating Ocean Science****Credits 3. 3 Lecture Hours.**

Instruction and practice with presenting scientific information on the ocean to a variety of audiences under different time constraints; critical components for any presentation; knowing your audience; designing effective visual aids and graphics; leading your audience through complex concepts; and communication with non-scientists.

OCNG 604 Ocean Observing Systems**Credits 3. 3 Other Hours.**

Investigate the rationale behind ocean observing systems; familiarize with the relevant social, scientific design, technology, and policy issues associated with observing systems.

Prerequisite: Approval of instructor.**OCNG 605 Oceanography Cruise****Credits 2. 2 Other Hours.**

Specialized experience in research methods and analysis in oceanography via preparation for and participation in a research cruise of at least two weeks duration under the supervision of a Texas A&M oceanography faculty member. May be taken up to two times for MS candidates and four times for PhD candidates.

Prerequisite: Approval of instructor.**OCNG 608 Physical Oceanography****Credits 3. 3 Lecture Hours.**

Observations, instruments; physical properties of seawater; property distributions; characteristics of water masses; heat budget; kinematics; gravity, pressure, hydrostatics, stability; horizontal flow; Coriolis force, geostrophy; friction, wind drift; general circulation; wave motions; tides.

Prerequisites: MATH 152 and PHYS 208, or equivalents.**OCNG 609 Dynamical Oceanography****Credits 3. 3 Lecture Hours.**

Systematic treatment of the kinematics, dynamics and thermodynamics of the ocean; integral conservation relations; solenoidal versus conservative vector fields; potential vorticity; geostrophic adjustment; inertial and buoyancy modes; Bernoulli-Montgomery potential; energetics in a rotating system; available potential energy; natural temporal and spatial scales.

Prerequisites: OCNG 608 or ATMO 435; MATH 601.**OCNG 610 Mathematical Modeling of Marine Ecosystems****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Theory and technique of model development for marine ecosystems; mathematical representation of interactions among nutrients, phytoplankton, zooplankton, fish and the physical environment; scrutiny of biological concepts and mathematical structure of existing models; laboratory segment to focus on computational techniques applicable to classroom problems.

Prerequisites: OCNG 608 and OCNG 620, calculus or approval of instructor.**OCNG 611 Global Scale Oceanography****Credits 3. 3 Lecture Hours.**

A balanced description of the ocean's large-scale circulation and water mass structure based on the interpretation of modern observations, with emphasis on the ocean's role in global climate, and physical-chemical property fluxes in basin to global scale budgets.

OCNG 612 Elements of Ocean Wave Theory**Credits 3. 3 Lecture Hours.**

Theories of simple harmonic surface gravity, capillary and internal waves. Wave propagation, dispersion and energy; modifications due to rotation, variable depth and finite amplitude.

Prerequisites: OCNG 608 and MATH 601 or approval of instructor.**OCNG 616 Numerical Modeling of Ocean Circulation****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Quasigeostrophic ocean circulation models; Arakawa's energy and enstrophy conserving scheme; spectral barotropic vorticity model on sphere; shallow water primitive equation models; geostrophic adjustment on different numerical grids; boundary conditions in numerical models; introduction to ocean general circulation models; mixed models and sub-gridscale parameterization; oceanic data assimilation.

Prerequisite: OCNG 618.**OCNG 617 Theories of Ocean Circulation****Credits 3. 3 Lecture Hours.**

Theories of wind-driven circulation, Sverdrup solution, frictional and inertial boundary regimes; instabilities, meanders and mesoscale features; role of stratification, topography and time dependence; Thermohaline circulation.

Prerequisite: Graduate classification.**OCNG 618 Numerical Methods for the Geosciences****Credits 3. 3 Lecture Hours.**

Mathematical theory and numerical techniques for modeling physical systems and processes in the Geosciences; discretization of continuum equations for solids and fluids; finite difference methods, convergence, consistency, and stability; finite element and spectral methods in fluid dynamics and seismology; iterative solvers; implicit and explicit methods for diffusion and advection.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** ATMO 618 and GEOP 618.

OCNG 620 Biological Oceanography**Credits 3. 3 Lecture Hours.**

Critical analysis of contribution of biological science to our understanding of sea; discernible interrelationships between organisms and physicochemical parameters.

Prerequisites: General prerequisites for oceanography.

OCNG 625 Current Topics in Biological Oceanography**Credit 1. 1 Lecture Hour.**

Areas of current research; plankton processes; microbial food web; benthic communities; fisheries; global change. May be taken up to three times.

Prerequisite: OCNG 620 or approval of instructor.

OCNG 627 Ecology of the Continental Shelf**Credits 3. 3 Lecture Hours.**

Environments, populations and communities of the continental shelf. Interactions of the shelf with the estuaries and the deep sea; man's impact on the shelf ecosystems.

Prerequisite: Approval of instructor.

OCNG 630 Geological Oceanography**Credits 3. 3 Lecture Hours.**

Survey of marine geology, structure and composition of ocean basins and continental margins, properties of marine sediments.

Prerequisites: General prerequisites for oceanography.

OCNG 632 Sea-Level Change**Credits 3. 3 Lecture Hours.**

Modern sea level; topography, measurement, meteorologic and oceanographic contributions, periodic and non-periodic changes; long-term changes: determination, Cenozoic history, Quaternary glacial-interglacial fluctuations; changes during the past century and decade; observations, natural and anthropogenic influences; estimates of future changes and societal implications.

Prerequisite: Graduate classification; approval of instructor.

OCNG 640 Chemical Oceanography**Credits 3. 3 Lecture Hours.**

Chemical composition and properties of seawater, evaluation of salinity, pH, excess base and carbon dioxide in sea. Marine nutrients, oxygen and other dissolved gases, organic constituents.

Prerequisites: General prerequisites for oceanography.

OCNG 641 Inorganic Aquatic Geochemistry**Credits 3. 3 Lecture Hours.**

Chemical composition and properties of waters in the near Earth surface environment and their interactions with sedimentary minerals; major topics: thermochemical properties of natural waters, equilibrium and kinetic controlling ion speciation; geochemical processes at mineral surfaces; kinetics of mineral-water interactions; applications to modeling early diagenesis.

Prerequisite: Approval of instructor.

OCNG 644 Isotope Geochemistry**Credits 3. 3 Lecture Hours.**

Stable and radioactive isotope variations in natural materials; applications to geochronometric, geothermometric and paleoclimatologic studies of the marine environment.

Prerequisite: Approval of instructor.

OCNG 645 Marine Organic Geochemistry**Credits 3. 3 Lecture Hours.**

Origins, fates and distribution of organic compounds in contemporary marine environments and in recent and ancient sediments. Specific analytical techniques.

Prerequisite: Approval of instructor.

OCNG 646 Dynamics of Colloids in the Environment**Credits 3. 3 Lecture Hours.**

Equilibrium and dynamic aspects of the physics and chemistry of such colloidal particles and macromolecules and the implications for environmental systems, relevant for organic carbon flux and cycling, fate and transport of pollutants, bioavailability of pollutants, or mobility of pollutants in groundwater.

Prerequisites: Physical Chemistry, Thermodynamics, Aquatic and Organic Chemistry.

OCNG 649 Estuarine Biogeochemistry**Credits 3. 3 Lecture Hours.**

Geomorphology; physical oceanography and sedimentation dynamics of estuaries; chemistry of nutrients; trace metals and organic matter; major controls in estuarine productivity and interactions among estuaries, marshes and coastal waters.

Prerequisites: OCNG 620 and OCNG 640.

OCNG 650 Aquatic Microbial Ecology**Credits 3. 3 Lecture Hours.**

Microbes in natural environments, including both water and sediment habitats in marine, fresh and ground water systems; process studies of microbial foodwebs and biogeochemical cycling; current methods and research directions.

Prerequisites: OCNG 620 and WFSC 414 or approval of instructor.

OCNG 651/ATMO 651 Dynamics of Ocean-Atmosphere Interaction**Credits 3. 3 Lecture Hours.**

Major features of the atmosphere and ocean; interaction between the two systems; coupled modes of variability in ocean-atmosphere system; dynamics of El Niño-Southern Oscillation and related phenomena in the tropics; extratropical ocean-atmosphere feedbacks.

Prerequisite: OCNG 608 or ATMO 601.

Cross Listing: ATMO 651/OCNG 651.

OCNG 652 Sedimentary Biogeochemistry**Credits 3. 3 Lecture Hours.**

An interdisciplinary approach to understanding complex processes that occur near the marine sediment-water interface in marine and estuarine environments. Composition of marine sediments, pore water chemistry, role of organisms in chemical transformations and pelagic-benthic coupling. Carbon, nitrogen and sulfur cycling in sediments. Modeling biogeochemical processes at the sediment-water interface and during early burial diagenesis.

Prerequisites: OCNG 620 and OCNG 640 or approval of instructor.

OCNG 654 Plankton Ecology**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Elective course, overview of phytoplankton and zooplankton; taxonomy; physiology; ecology; sampling design; current methods of investigation.

Prerequisite: OCNG 620.

OCNG 655 Experimental Design and Analysis in Oceanography**Credits 3. 3 Lecture Hours.**

Elements of experimental design in oceanography; logistics of data collection; critical evaluation of field sampling strategies; formulation of field studies suitable for hypothesis-based inquires using the standard linear regression mode; analysis of variance and principal component analysis.

Prerequisite: Approval of instructor.**OCNG 656 MATLAB Programming for Ocean Sciences****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Computation techniques for oceanographic data processing using MATLAB; focus on the analysis of oceanographic-related data sets and real-world oceanographic applications; individual data sets analyzed.

Prerequisite: Graduate classification.**OCNG 657 Data Methods and Graphical Representation in Oceanography****Credits 3. 3 Lecture Hours.**

Application of advanced statistical, quantitative and computational methods to oceanographic observational data; methodologies emphasized include spectral analysis and representations of time series data, optimal interpolation of irregular data fields, analysis of multiple variables using Empirical Orthogonal Functions and scientific interpretation of statistical quantities.

Prerequisite: Approval of instructor.**OCNG 658 Ocean Computational Analysis Lab****Credit 1. 4 Lab Hours.**

Laboratory course designed to train in computational techniques using modern (Python) and classic (FORTRAN) programming languages and scientific software packages (Generic Mapping Tools and MATLAB); labs focus on real oceanographic applications.

Prerequisites: Encourage concurrent with OCNG 657.**OCNG 659 Ocean Observing Applications****Credits 3. 3 Lecture Hours.**

Conceptualization, design, and construction of oceanographic observing systems; practical experience with the Texas Automated Buoy System including system design, instrumentation setup and calibration, telecommunication systems, and data management.

Prerequisites: Master or doctoral classification in OCNG or related field by approval of instructor.**OCNG 661 Advanced Oceanographic Data Analysis and Communication****Credits 3. 3 Lecture Hours.**

Project design and planning for oceanographers; oceanographic data organization and analysis; synthesis and interpretation of data analysis; technical report writing and presentation.

Prerequisites: OCNG 603, OCNG 604, OCNG 608 and OCNG 657, or instructor approval.**OCNG 662 Coastal and Marine Sedimentary Processes****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Sedimentary processes (erosion, transport and deposition) from the coastline to the deep sea; development of estuaries, deltas, continental shelves, submarine canyons, fans; behavior of fluids and particles in boundary layers. Lab: recirculating flume, field and lab instrumentation.

Prerequisite: Approval of instructor.**OCNG 666 Principles of Geodynamics****Credits 4. 4 Lecture Hours.**

Geological and geophysical methods and phenomena pertinent to geodynamics; plate tectonics; seismicity and seismology; magnetism; gravity; heat flow; igneous, metamorphic and sedimentary petrology; paleontology; and rock mechanics.

Prerequisite: Approval of instructor.**OCNG 668 Geology and Geophysics of Small Ocean Basins****Credits 3. 3 Lecture Hours.**

Geology and geophysics of the Gulf of Mexico, Caribbean, Mediterranean, Arctic Ocean, Red Sea and Philippine Sea; the regional geology, sediment distribution, general structure and origin of each basin.

Prerequisite: OCNG 630.**OCNG 669 Python for Geosciences****Credits 3. 3 Lecture Hours. 1 Lab Hour.**

Core language Python programming; scientific programming analysis methods; analysis of large geophysical data sets; plotting geophysical data; interpolation.

Prerequisite: Graduate classification.**OCNG 670 Deep Sea Sediments****Credits 3. 3 Lecture Hours. 0 Lab Hours.**

Formation process, core description, physical properties, lithostratigraphy, seismic stratigraphy and paleoceanographic significance of deep marine sediments.

OCNG 673 High-Resolution Marine Geophysics**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Introduction to the geophysical nature of the seafloor and marine subbottom to 1.5 seconds two-way travel time; generation, use and interpretation of reflection and side-scan sonar records and magnetic anomalies of various marine environments and seafloor features.

Prerequisite: Approval of instructor.**OCNG 674 Paleoceanography****Credits 3. 3 Lecture Hours.**

History of oceans through geologic time; marine paleontological, geochemical, sedimentological and geophysical evidence; inferred changes in seawater properties, ocean circulation and sea level; relation to climate, tectonic processes, atmospheric chemistry and evolution of life.

Prerequisite: OCNG 630 or approval of instructor.**OCNG 677/ATMO 677 Geophysical Data Assimilation****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Modern data assimilation methods applied to oceanic and atmospheric circulation models, as well as in other simple models; methods to interpolate one-, two- and three-dimensional randomly spaced data to regular grids for use in numerical models of atmospheric and oceanic circulation.

Prerequisites: OCNG 657, ATMO 632, STAT 601.**Cross Listing:** ATMO 677/OCNG 677.**OCNG 678 Coastal Dynamics****Credits 3. 3 Lecture Hours.**

Surveys dynamical processes that determine estuarine and continental shelf circulation; geophysical scale flow where Earth's rotation and buoyancy effects are important; analytical and numerical methods used to isolate and study these processes.

Prerequisite: OCNG 609.**OCNG 679 Proxy Reconstruction of Late Cenozoic Climate: Calibrations and Applications****Credits 3. 3 Lecture Hours.**

Paleo-proxy calibration and application in reconstructing Late Cenozoic climate history; issues related to geochemical and sedimentological proxies used in the field of paleoclimatology/ paleoceanography.

Prerequisite: Graduate classification.

OCNG 681 Seminar**Credit 1. 1 Lecture Hour.**

Presented by faculty, students, staff and visiting scientists; based on recent scientific research.

Cross Listing: MARB 681 and MARS 681.

OCNG 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

A directed internship in a professional setting to provide on-the-job training in ocean observing systems skills appropriate to the student's professional objectives.

Prerequisites: Approval of student's committee chair.

OCNG 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Special topics to suit small group requirements. Problems not within thesis research and not covered by any other course in established curriculum.

Prerequisites: General prerequisites for oceanography.

OCNG 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of oceanography. May be repeated for credit.

Prerequisite: Approval of instructor.

OCNG 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

For thesis or dissertation.

OMFP - Oral & Maxillofac Path

OMFP 600 Current Issues in Oral and Maxillofacial Pathology I**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar discussion of current and past literature in oral and maxillofacial pathology.

OMFP 601 Current Issues in Oral and Maxillofacial Pathology II**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar discussion of current and past literature in oral and maxillofacial pathology.

OMFP 602 Current Issues in Oral and Maxillofacial Pathology III**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar discussion of current and past literature in oral and maxillofacial pathology.

OMFP 603 Oral and Maxillofacial Pathology Seminar I**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 604 Oral and Maxillofacial Pathology Seminar II**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; ; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 605 Oral and Maxillofacial Pathology Seminar III**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 606 Oral and Maxillofacial Pathology Seminar IV**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 607 Oral and Maxillofacial Pathology Seminar V**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 608 Oral and Maxillofacial Pathology Seminar VI**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 609 Oral and Maxillofacial Pathology Seminar VII**Credits 0 to 10. 0 to 10 Lecture Hours.**

Seminar format on surgical anatomic pathology; daily interaction with faculty, utilizing multi-headed teaching microscopes; discuss all pathology cases accessioned daily; more diagnostically challenging cases are supplemented; all aspects of the diseases and conditions are discussed as well as current and historical literature.

OMFP 610 Anatomic Pathology and Autopsy - Baylor University Medical Center I**Credits 0 to 10. 0 to 10 Other Hours.**

Baylor University Medical Center rotation in Department of Pathology; anatomic pathology, clinical pathology, autopsy service, cytology, selected electives.

OMFP 611 Anatomic Pathology and Autopsy - Baylor University Medical Center II**Credits 0 to 10. 0 to 10 Other Hours.**

Baylor University Medical Center rotation in Department of Pathology; anatomic pathology, clinical pathology, autopsy service, cytology, selected electives.

OMFP 612 Oral and Maxillofacial Pathology Service I**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 613 Oral and Maxillofacial Pathology Service II**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 614 Oral and Maxillofacial Pathology Service III**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 615 Oral and Maxillofacial Pathology Service IV**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 616 Oral and Maxillofacial Pathology Service V**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 617 Oral and Maxillofacial Pathology Service VI**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 618 Oral and Maxillofacial Pathology Service VII**Credits 0. 0 Lab Hours. 0 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description.

OMFP 619 Advanced Oral Pathology**Credits 0 to 10. 0 to 10 Other Hours.**

Disease of the head and neck; developmental malformations, oral signs of systemic diseases, salivary gland disorders; neoplasms of odontogenic and nonodontogenic origin; three semester hours credit plus 1 additional hour for optional laboratory.

OMFP 620 Advanced Oral Pathology Laboratory**Credits 0 to 10. 0 to 10 Lab Hours.**

Elective laboratory that complements OMFP 619; designed for post-graduate students that might need to view and interpret biopsy results; histologic correlation for the clinical pathologic lesions discussed in OMFP 619; basic interpretation skills of histopathologic sections as viewed under the microscope.

OMFP 621 Scientific Writing I**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 622 Scientific Writing II**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 623 Scientific Writing III**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 624 Scientific Writing IV**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 625 Scientific Writing V**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 626 Scientific Writing VI**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 627 Scientific Writing VII**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 628 Scientific Writing VIII**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 629 Scientific Writing IX**Credits 1 to 3. 1 to 3 Other Hours.**

Guidance and time necessary to successfully complete a pathology case study that leads to a journal article; collection of pertinent clinical information, pathological findings and follow-up information; outlines, preparation and writing each section of the manuscript.

OMFP 630 Directed Readings I**Credits 0 to 3. 0 to 3 Other Hours.**

Current Oral & Maxillofacial Pathology topics.

OMFP 631 Directed Readings II**Credits 0 to 3. 0 to 3 Other Hours.**

Current Oral & Maxillofacial Pathology topics.

OMFP 632 Directed Readings III**Credits 0 to 3. 0 to 3 Other Hours.**

Current Oral & Maxillofacial Pathology topics.

OMFP 639 Oral and Maxillofacial Pathology Service VIII**Credits 0 to 5. 0 to 5 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description. May be taken nine times for credit.

OMFP 640 Oral and Maxillofacial Pathology Service IX**Credits 0 to 5. 0 to 5 Other Hours.**

Independent study in surgical anatomic oral and maxillofacial pathology; gross tissue preparation, microscopic analysis of routine surgical head and neck biopsies, special study sets and microscopic description. May be repeated nine times for credit.

OMFP 650 Oral and Maxillofacial Pathology Seminar VIII**Credits 0 to 10. 0 to 10 Other Hours.**

Biopsy specimen review, case consultation, cytologic smears, special cases, set case study. May be taken up to 20 hours for credit.

OMFP 651 Oral and Maxillofacial Pathology Seminar IX**Credits 0 to 10. 0 to 10 Other Hours.**

Biopsy specimen review, case consultation, cytologic smears, special cases, set case study. May be taken up to 20 hours for credit.

OMFP 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of oral and maxillofacial pathology. May be repeated for credit.

OMFP 691 Research**Credits 0 to 10. 0 to 10 Other Hours.**

Research for thesis or dissertation.

OMFR - Oral & Maxillofac Radio

OMFR 600 Radiation Physics and Biology for Radiology Residents I**Credits 0. 0 Lecture Hours.**

Non-credit. This course will provide instruction in radiation physics, advanced imaging technology, radiobiology, and radiation safety. The student/resident will develop the skills necessary to understand the scientific basis of imaging systems and successfully challenge the certification examination of the American Board of Oral and Maxillofacial Radiology. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 601 Radiation Physics and Biology for Radiology Residents II**Credits 0. 0 Lecture Hours.**

Non-credit. This course will provide instruction in radiation physics, advanced imaging technology, radiobiology, and radiation safety. The student/resident will develop the skills necessary to understand the scientific basis of imaging systems and successfully challenge the certification examination of the American Board of Oral and Maxillofacial Radiology. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 602 Radiation Physics and Biology for Radiology Residents III**Credits 0. 0 Lecture Hours.**

Non-credit. This course will provide instruction in radiation physics, advanced imaging technology, radiobiology, and radiation safety. The student/resident will develop the skills necessary to understand the scientific basis of imaging systems and successfully challenge the certification examination of the American Board of Oral and Maxillofacial Radiology. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 603 Radiation Physics and Biology for Radiology Residents IV**Credits 0. 0 Lecture Hours.**

Non-credit. This course will provide instruction in radiation physics, advanced imaging technology, radiobiology, and radiation safety. The student/resident will develop the skills necessary to understand the scientific basis of imaging systems and successfully challenge the certification examination of the American Board of Oral and Maxillofacial Radiology. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 604 Case Conference I**Credits 0. 0 Other Hours.**

Non-credit. Case presentations of complicated clinical cases encountered while on clinical radiology services which require advanced skills by students/residents and graduate faculty in a prescribed format. Participants will review the literature, present selected imaging studies, and discuss salient points relative to the diagnosis and management of specific diagnostic entities. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 605 Case Conference II**Credits 0. 0 Other Hours.**

Non-credit. Case presentations of complicated clinical cases encountered while on clinical radiology services which require advanced skills by students/residents and graduate faculty in a prescribed format. Participants will review the literature, present selected imaging studies, and discuss salient points relative to the diagnosis and management of specific diagnostic entities. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 606 Case Conference III**Credits 0. 0 Other Hours.**

Non-credit. Case presentations of complicated clinical cases encountered while on clinical radiology services which require advanced skills by students/residents and graduate faculty in a prescribed format. Participants will review the literature, present selected imaging studies, and discuss salient points relative to the diagnosis and management of specific diagnostic entities. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 607 Case Conference IV**Credits 0. 0 Other Hours.**

Non-credit. Case presentations of complicated clinical cases encountered while on clinical radiology services which require advanced skills by students/residents and graduate faculty in a prescribed format. Participants will review the literature, present selected imaging studies, and discuss salient points relative to the diagnosis and management of specific diagnostic entities. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 608 Case Conference V**Credits 0. 0 Other Hours.**

Non-credit. Case presentations of complicated clinical cases encountered while on clinical radiology services which require advanced skills by students/residents and graduate faculty in a prescribed format. Participants will review the literature, present selected imaging studies, and discuss salient points relative to the diagnosis and management of specific diagnostic entities. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 609 Advanced Radiology Interpretation in Oral and Maxillofacial Radiology**Credits 2. 2 Lecture Hours.**

Advanced interpretation of oral and maxillofacial radiology imaging studies. Topics include recognition of normal anatomy and its variants, diseases, conditions, abnormalities as they appear on imaging studies of different modalities. Skills in differential diagnosis based on interpretive findings will be developed along with assessing the clinical significance of findings.

OMFR 610 Advanced Imaging Technology in Oral and Maxillofacial Radiology**Credits 1 to 2. 1 to 2 Lab Hours.**

Acquisition techniques using ionizing radiation, nonionizing radiation and other imaging modalities; plain radiography image projects, panoramic radiology, cone beam computed tomography and multi-detector computed tomography; magnetic resonance imaging, nuclear medicine/molecular imaging and ultrasonography.

OMFR 611 Advanced Oral and Maxillofacial Radiology**Credit 1. 1 Lecture Hour.**

Advanced review of medico-legal aspects of radiology; advanced interpretation principles, comparison and selection of digital imaging systems, advanced imaging techniques and radiation risk.

OMFR 612 Clinical Teaching I**Credits 0. 0 Other Hours.**

Non-credit. Students/residents give clinical instruction in contact with second-, third- and fourth-year dental students. Four hours per week per semester of clinical instruction, including technical/acquisition, interpretation of imaging studies, and clinical significance of findings. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 613 Clinical Teaching II**Credits 0. 0 Other Hours.**

Non-credit. Students/residents give clinical instruction in contact with second-, third- and fourth-year dental students. Four hours per week per semester of clinical instruction, including technical/acquisition, interpretation of imaging studies, and clinical significance of findings. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 614 Clinical Teaching III**Credits 0. 0 Other Hours.**

Non-credit. Students/residents give clinical instruction in contact with second-, third- and fourth-year dental students. Four hours per week per semester of clinical instruction, including technical/acquisition, interpretation of imaging studies, and clinical significance of findings. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 615 Clinical Teaching IV**Credits 0. 0 Other Hours.**

Non-credit. Students/residents give clinical instruction in contact with second-, third- and fourth-year dental students. Four hours per week per semester of clinical instruction, including technical/acquisition, interpretation of imaging studies, and clinical significance of findings. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 616 Literature Review Journal Club I**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of significant literature on all subjects related to oral and maxillofacial radiology. Critical evaluation of the scientific literature will be stressed. Students are assigned recent or classical articles from selected journals for critical review for scientific merit and relevance. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 617 Literature Review Journal Club II**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of significant literature on all subjects related to oral and maxillofacial radiology. Critical evaluation of the scientific literature will be stressed. Students are assigned recent or classical articles from selected journals for critical review for scientific merit and relevance.

OMFR 618 Literature Review Journal Club III**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of significant literature on all subjects related to oral and maxillofacial radiology. Critical evaluation of the scientific literature will be stressed. Students are assigned recent or classical articles from selected journals for critical review for scientific merit and relevance.

OMFR 619 Literature Review Journal Club IV**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of significant literature on all subjects related to oral and maxillofacial radiology. Critical evaluation of the scientific literature will be stressed. Students are assigned recent or classical articles from selected journals for critical review for scientific merit and relevance.

OMFR 620 Literature Review Journal Club V**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of significant literature on all subjects related to oral and maxillofacial radiology. Critical evaluation of the scientific literature will be stressed. Students are assigned recent or classical articles from selected journals for critical review for scientific merit and relevance.

OMFR 621 Literature Review Journal Club VI**Credits 0.5-1. 0.5-1 Other Hours.**

Literature Review Journal Club IV. 5-1. Detailed review of significant literature on all subjects related to oral and maxillofacial radiology. Critical evaluation of the scientific literature will be stressed. Students are assigned recent or classical articles from selected journals for critical review for scientific merit and relevance.

OMFR 622 Clinical Oral and Maxillofacial Radiology Service I**Credits 2 to 6. 2 to 6 Other Hours.**

This course will prepare the student/resident for the clinical practice of oral and maxillofacial radiology. The student/resident will develop the skills necessary to order, acquire, and interpret diagnostic imaging studies. This will include the formulation and dictation of interpretation reports and interactions with other health care professionals and patients. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 623 Clinical Oral and Maxillofacial Radiology Service II**Credits 2 to 6. 2 to 6 Other Hours.**

This course will prepare the student/resident for the clinical practice of oral and maxillofacial radiology. The student/resident will develop the skills necessary to order, acquire, and interpret diagnostic imaging studies. This will include the formulation and dictation of interpretation reports and interactions with other health care professionals and patients. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 624 Clinical Oral and Maxillofacial Radiology Service III**Credits 2 to 6. 2 to 6 Other Hours.**

This course will prepare the student/resident for the clinical practice of oral and maxillofacial radiology. The student/resident will develop the skills necessary to order, acquire, and interpret diagnostic imaging studies. This will include the formulation and dictation of interpretation reports and interactions with other health care professionals and patients. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 625 Clinical Oral and Maxillofacial Radiology Service IV**Credits 2 to 6. 2 to 6 Other Hours.**

This course will prepare the student/resident for the clinical practice of oral and maxillofacial radiology. The student/resident will develop the skills necessary to order, acquire, and interpret diagnostic imaging studies. This will include the formulation and dictation of interpretation reports and interactions with other health care professionals and patients.

OMFR 626 Clinical Oral and Maxillofacial Radiology Service V**Credits 2 to 6. 2 to 6 Other Hours.**

This course will prepare the student/resident for the clinical practice of oral and maxillofacial radiology. The student/resident will develop the skills necessary to order, acquire, and interpret diagnostic imaging studies. This will include the formulation and dictation of interpretation reports and interactions with other health care professionals and patients.

OMFR 627 Clinical Oral and Maxillofacial Radiology Service VI
Credits 2 to 6. 2 to 6 Other Hours.

This course will prepare the student/resident for the clinical practice of oral and maxillofacial radiology. The student/resident will develop the skills necessary to order, acquire, and interpret diagnostic imaging studies. This will include the formulation and dictation of interpretation reports and interactions with other health care professionals and patients.

OMFR 628 Medical Clinical Radiology Service I
Credits 1 to 4. 1 to 4 Other Hours.

This clinical course will familiarize the student/resident with the imaging modalities used in contemporary medical radiology and their application to diseases of the head and neck. The course includes specialty level modality selection, study acquisition, and interpretation. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 629 Medical Clinical Radiology Service II
Credits 1 to 4. 1 to 4 Other Hours.

This clinical course will familiarize the student/resident with the imaging modalities used in contemporary medical radiology and their application to diseases of the head and neck. The course includes specialty level modality selection, study acquisition, and interpretation. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 630 Medical Clinical Radiology Service III
Credits 1 to 4. 1 to 4 Other Hours.

This clinical course will familiarize the student/resident with the imaging modalities used in contemporary medical radiology and their application to diseases of the head and neck. The course includes specialty level modality selection, study acquisition, and interpretation. Must be taken on a satisfactory/unsatisfactory basis.

OMFR 689 Special Topics In...

Credits 0 to 4. 0 to 4 Other Hours.

Selected topics in an identified area of oral and maxillofacial radiology. May be repeated for credit.

OMFR 691 Research

Credits 0 to 10. 0 to 10 Other Hours.

Research for thesis or dissertation.

OMFS - Oral & Maxillofac Surg

OMFS 610 Conscious Sedation

Credit 1. 1 Other Hour.

Pain and anxiety control methodologies; pharmacology of sedative-hypnotic, anxiolytic drugs and nitrous oxide; routes of administration.

OMFS 615 Physical Diagnosis

Credit 1. 1 Other Hour.

Patient evaluation and examination, history-taking medical consultation and physical diagnosis and treatment modification in dental patients.

OMFS 620 Internal Medicine

Credits 1 to 2. 1 to 2 Other Hours.

Oral manifestations of systemic disease and influence of systemic disease requiring modification of treatment planning and critical care.

OMFS 625 Physical Diagnosis and Internal Medicine

Credit 1. 1 Lecture Hour.

Introduction to physical diagnosis and internal medicine; combination of lectures, student presentations, and group discussion facilitated by the faculty; student groups assigned topics to lead discussion; expected to present articles; topics cover history and physical, medical assessment, systems of the body (abdomen, cardiovascular system, respiratory system, hematology, endocrinology, infectious diseases); emphasis placed on oral manifestations and management pertinent to dentistry.

OMFS 650 Oral and Maxillofacial Surgery Rotations

Credit 1. 1 Other Hour.

Surgical rotations in Oral and Maxillofacial Surgery; can be repeated each academic term.

OMFS 689 Special Topics In...

Credits 0 to 4. 0 to 4 Other Hours.

Selected topics in an identified area of oral and maxillofacial surgery. May be repeated for credit.

OMFS 691 Research

Credits 0 to 10. 0 to 10 Other Hours.

Research for thesis or dissertation.

ORTH - Orthodontics

ORTH 600 Orthodontic-Periodontic Seminar

Credits 0.5. 0.5 Other Hours.

An interdisciplinary course directed at topics relevant to orthodontics and periodontics; effect of orthodontics on the supporting tissues, oral hygiene and periodontal assessment, and interdisciplinary approaches to treatment are topics of discussion.

ORTH 601 TMD Clinic I

Credits 0. 0 Other Hours.

A series of lectures, guest speakers, demonstrations, laboratory exercises, and patient care activities are conducted to enable the student to diagnose, plan treatment, and treat patients with occlusal discrepancies, compromised muscle function, and TMJ abnormalities.

ORTH 602 TMD Clinic II

Credits 0. 0 Other Hours.

A series of lectures, guest speakers, demonstrations, laboratory exercises, and patient care activities are conducted to enable the student to diagnose, plan treatment, and treat patients with occlusal discrepancies, compromised muscle function, and TMJ abnormalities.

ORTH 603 TMD Clinic III

Credits 0. 0 Other Hours.

A series of lectures, guest speakers, demonstrations, laboratory exercises, and patient care activities are conducted to enable the student to diagnose, plan treatment, and treat patients with occlusal discrepancies, compromised muscle function, and TMJ abnormalities.

ORTH 604 TMD Clinic IV

Credits 0. 0 Other Hours.

A series of lectures, guest speakers, demonstrations, laboratory exercises, and patient care activities are conducted to enable the student to diagnose, plan treatment, and treat patients with occlusal discrepancies, compromised muscle function, and TMJ abnormalities.

ORTH 605 TMD Clinic V**Credits 0. 0 Other Hours.**

A series of lectures, guest speakers, demonstrations, laboratory exercises, and patient care activities are conducted to enable the student to diagnose, plan treatment, and treat patients with occlusal discrepancies, compromised muscle function, and TMJ abnormalities.

ORTH 606 Craniofacial Anomalies Clinic I**Credits 0. 0 Other Hours.**

During the second and third years, students rotate through the local children's hospital for the purpose of participating in the treatment of patients with a wide array of syndromes and craniofacial defects; from newborn to adult, a large number of patients are treated; orthodontics is integrated with plastic surgery in this clinic.

ORTH 607 Craniofacial Anomalies Clinic II**Credits 0. 0 Other Hours.**

During the second and third years, students rotate through the local children's hospital for the purpose of participating in the treatment of patients with a wide array of syndromes and craniofacial defects; from newborn to adult, a large number of patients are treated; orthodontics is integrated with plastic surgery in this clinic.

ORTH 608 Craniofacial Anomalies Clinic III**Credits 0. 0 Other Hours.**

During the second and third years, students rotate through the local children's hospital for the purpose of participating in the treatment of patients with a wide array of syndromes and craniofacial defects; from newborn to adult, a large number of patients are treated; orthodontics is integrated with plastic surgery in this clinic.

ORTH 609 Craniofacial Anomalies Clinic IV**Credits 0. 0 Other Hours.**

During the second and third years, students rotate through the local children's hospital for the purpose of participating in the treatment of patients with a wide array of syndromes and craniofacial defects; from newborn to adult, a large number of patients are treated; orthodontics is integrated with plastic surgery in this clinic.

ORTH 610 Biomechanics I**Credits 0.5-1. 0.5-1 Lecture Hours.**

5-1. Mechanical principles and biological factors affecting tooth movement, introduction to forces, statics, and dynamics, scalars and vectors, and analysis of force systems; force and movement; basic concepts fundamental to an understanding of tooth movement.

ORTH 611 Biomechanics II**Credits 0.5-1. 0.5-1 Lecture Hours.**

5-1. Mechanical principles and biological factors affecting tooth movement, introduction to forces, statics, and dynamics, scalars and vectors, and analysis of force systems; force and movement; basic concepts fundamental to an understanding of tooth movement.

ORTH 612 Material Science in Orthodontics**Credits 0.5-1. 0.5-1 Lecture Hours.**

5-1. Evaluation and utilization of dental materials used in clinical orthodontics.

ORTH 613 Advanced Cephalometrics**Credit 1. 1 Lecture Hour.**

Advanced topics relating to the cephalometric technique are presented, including superimposition, growth and treatment prediction, treatment assessment, consideration of error, orthognathic surgery treatment planning, and image enhancement techniques.

ORTH 614 Orthognathic Surgery Conference I**Credits 0 to 10. 0 to 10 Other Hours.**

Seminar/conference series involving the departments of Orthodontics and Oral and Maxillofacial Surgery in a multidisciplinary approach to the treatment of those patients with substantial craniofacial deformities; begins in the first year with a series of lectures/seminars on specific diagnostic and treatment procedures, followed by assignment of patients that will be supervised jointly by both specialties; regular conferences are held to discuss pertinent literature, review patient progress, plan treatment, and present completed cases; involvement in all phases of treatment: pre-surgical orthodontics, the surgical procedure, finishing, and retention.

ORTH 615 Orthognathic Surgery Conference II**Credits 0 to 10. 0 to 10 Other Hours.**

Seminar/conference series involving the departments of Orthodontics and Oral and Maxillofacial Surgery in a multidisciplinary approach to the treatment of those patients with substantial craniofacial deformities; begins in the first year with a series of lectures/seminars on specific diagnostic and treatment procedures, followed by assignment of patients that will be supervised jointly by both specialties; regular conferences are held to discuss pertinent literature, review patient progress, plan treatment, and present completed cases; involvement in all phases of treatment: pre-surgical orthodontics, the surgical procedure, finishing, and retention.

ORTH 616 Orthognathic Surgery Conference III**Credits 0 to 10. 0 to 10 Other Hours.**

Seminar/conference series involving the departments of Orthodontics and Oral and Maxillofacial Surgery in a multidisciplinary approach to the treatment of those patients with substantial craniofacial deformities; begins in the first year with a series of lectures/seminars on specific diagnostic and treatment procedures, followed by assignment of patients that will be supervised jointly by both specialties; regular conferences are held to discuss pertinent literature, review patient progress, plan treatment, and present completed cases; involvement in all phases of treatment: pre-surgical orthodontics, the surgical procedure, finishing, and retention.

ORTH 617 Orthognathic Surgery Conference IV**Credits 0 to 10. 0 to 10 Other Hours.**

Seminar/conference series involving the departments of Orthodontics and Oral and Maxillofacial Surgery in a multidisciplinary approach to the treatment of those patients with substantial craniofacial deformities; begins in the first year with a series of lectures/seminars on specific diagnostic and treatment procedures, followed by assignment of patients that will be supervised jointly by both specialties; regular conferences are held to discuss pertinent literature, review patient progress, plan treatment, and present completed cases; involvement in all phases of treatment: pre-surgical orthodontics, the surgical procedure, finishing, and retention.

ORTH 618 Orthognathic Surgery Conference V**Credits 0. 0 Other Hours.**

Seminar in which senior orthodontic and oral surgery residents work jointly to diagnose and generate treatment plan for patients who are anticipating combined orthodontic/orthognathic surgery treatment to correct a dental/skeletal imbalance; diagnosis and treatment plan(s) will be presented to the residents from both programs as well as attending faculty for critique and evaluation.

ORTH 619 Orthognathic Surgery Conference VI**Credits 0. 0 Other Hours.**

Seminar in which senior orthodontic and oral surgery residents work jointly to diagnose and generate treatment plan for patients who are anticipating combined orthodontic/orthognathic surgery treatment to correct a dental/skeletal imbalance; diagnosis and treatment plan(s) will be presented to the residents from both programs as well as attending faculty for critique and evaluation.

ORTH 620 Orthognathic Surgery Seminar**Credits 0.5. 0.5 Other Hours.**

Surgical rotations in Oral and Maxillofacial Surgery.

ORTH 621 Clinical Specialty Seminars I**Credits 0 to 3. 0 to 3 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 622 Clinical Specialty Seminars II**Credits 0 to 3. 0 to 3 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 623 Clinical Specialty Seminars III**Credits 0 to 3. 0 to 3 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 624 Clinical Specialty Seminars IV**Credits 0 to 10. 0 to 10 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 625 Clinical Specialty Seminars V**Credits 0 to 10. 0 to 10 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 626 Clinical Specialty Seminars VI**Credits 0 to 10. 0 to 10 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 627 Clinical Specialty Seminars VII**Credits 0 to 10. 0 to 10 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 628 Clinical Specialty Seminars VIII**Credits 0 to 10. 0 to 10 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 629 Clinical Specialty Seminars IX**Credits 0 to 10. 0 to 10 Other Hours.**

Series of courses are a companion to clinical training in orthodontics and involves faculty and student evaluation of historically significant as well as contemporary literature; other sessions, lectures and seminars complement the clinic experience with topics including patient management, treatment of variously aged patients and types of malocclusions, and various types of orthodontic and orthopedic appliances; exposure to the historical development of orthodontics, additional treatment philosophies through guest speakers and new developments in treatment; presentation of cases through descriptions of diagnosis, treatment planning, and treatment results.

ORTH 630 Advanced Orthodontic Practice Management I**Credits 0 to 2. 0 to 2 Lecture Hours.**

Course considers the ethical approach to practice promotion and professional interactions in addition to the basic principles of office management; includes consideration of staff selection, office design, accounting methods, insurance considerations, inventory control and financial planning.

ORTH 631 Advanced Orthodontic Practice Management II**Credits 0 to 2. 0 to 2 Lecture Hours.**

Course considers the ethical approach to practice promotion and professional interactions in addition to the basic principles of office management; includes consideration of staff selection, office design, accounting methods, insurance considerations, inventory control and financial planning.

ORTH 632 Principles of Scientific Methodology/Thesis Protocol**Credits 0.5. 0.5 Lecture Hours.**

Basic precepts of research and the methodology of critical literature review in preparation of a research proposal.

ORTH 633 Scientific Writing**Credits 0.5. 0.5 Other Hours.**

Series of courses designed to assist the student in the preparation of a research proposal, a proposal to secure extramural funding and the thesis; once research is concluded, instructions are given to enable the preparation of a manuscript suitable for publication.

ORTH 634 Independent Research I**Credits 0 to 10. 0 to 10 Other Hours.**

Activity related to definition of a research problem, searching the literature, conducting the research, analyzing the results and preparing the thesis.

ORTH 635 Independent Research II**Credits 0 to 10. 0 to 10 Other Hours.**

Activity related to definition of a research problem, searching the literature, conducting the research, analyzing the results and preparing the thesis.

ORTH 636 Independent Research III**Credits 0 to 10. 0 to 10 Other Hours.**

Activity related to definition of a research problem, searching the literature, conducting the research, analyzing the results and preparing the thesis.

ORTH 637 Independent Research-Manuscript Development I**Credits 0 to 2. 0 Lecture Hours. 0 to 2 Other Hours.**

Provides the guidance and time necessary for the residents to successfully complete the journal article summarizing the methods and results of their Master's research projects; orthodontic residents should endeavor to publish their research projects; need understanding of how to prepare their work for publication; publication requires a good understanding of the IMRAD structure; work closely with mentors, committees, and Dr. Buschang; learn how to outline the manuscript, prepare tables and figures, and write the text of the manuscript; accomplished primarily by one-to-one interactions with Dr. Buschang.

ORTH 638 Independent Research-Manuscript Development II**Credits 0 to 2. 0 Lecture Hours. 0 to 2 Other Hours.**

Provides the guidance and time necessary for the residents to successfully complete the journal article summarizing the methods and results of their Master's research projects; orthodontic residents should endeavor to publish their research projects; need understanding of how to prepare their work for publication; publication requires a good understanding of the IMRAD structure; work closely with mentors, committees, and Dr. Buschang; learn how to outline the manuscript, prepare tables and figures, and write the text of the manuscript; accomplished primarily by one-to-one interactions with Dr. Buschang.

ORTH 639 Independent Research-Manuscript Development III**Credits 0 to 2. 0 to 2 Other Hours.**

Provides the guidance and time necessary for the residents to successfully complete the journal article summarizing the methods and results of their Master's research projects; orthodontic residents should endeavor to publish their research projects; need understanding of how to prepare their work for publication; publication requires a good understanding of the IMRAD structure; work closely with mentors, committees, and Dr. Buschang; learn how to outline the manuscript, prepare tables and figures, and write the text of the manuscript; accomplished primarily by one-to-one interactions with Dr. Buschang.

ORTH 640 Introduction to Orthodontics I**Credits 0.50 to 1.5. 0.50 to 1.5 Lecture Hours.**

Basic topics related to the specialty of orthodontics; series of lectures covers material presented in a textbook directed toward graduate education.

ORTH 641 Introduction to Orthodontics II**Credits 0.50 to 1.5. 0.50 to 1.5 Lecture Hours.**

Basic topics related to the specialty of orthodontics; series of lectures covers material presented in a textbook directed toward graduate education.

ORTH 642 Introduction to Orthodontics III**Credits 1 to 2. 1 to 2 Lecture Hours.**

Basic topics related to the specialty of orthodontics; series of lectures covers material presented in textbooks directed toward graduate education.

ORTH 643 Introduction to Orthodontics IV**Credits 1 to 2. 1 to 2 Lecture Hours.**

Basic topics related to the specialty of orthodontics; series of lectures covers material presented in textbooks directed toward graduate education.

ORTH 644 Introduction to Cephalometrics (Advanced Cephalometrics)**Credit 1. 0.5 Lecture Hours. 0.5 Lab Hours.**

Provides a thorough understanding of craniofacial radiographic techniques with emphasis on cephalometric roentgenography; acquaintance with the use of X-rays, radiation hygiene, pathology and cephalometric techniques to assure proficiency in technical skills and in interpretation as needed for diagnostic procedures; includes both lecture and laboratory instruction.

ORTH 645 Craniofacial Growth and Development**Credits 1 to 1.5. 1 to 1.5 Lecture Hours.**

5. Clinical implications of changes in craniofacial form and function are presented; critical review of the literature is conducted relating knowledge of facial growth and clinical practice.

ORTH 646 Orthodontic Techniques**Credits 2. 2 Other Hours.**

Basic pre-clinical exercises designed to prepare the student for clinical practice; series of exercises are performed involving wire bending, soldering, impressions and model trimming, and the manipulation of acrylic.; edgewise course is conducted on typodonts simulating the treatment of various malocclusions.

ORTH 647 Clinical Orthodontics I**Credits 0 to 10. 0 to 10 Other Hours.**

Diagnosis and treatment of patients with a broad variety of malocclusions; patient with typical malocclusions and requiring early treatment, dentofacial orthopedics, orthognathic surgery, and interdisciplinary care are selected as educational models; techniques focus on standard edgewise technique including pretorqued and preangulated brackets and lingual orthodontics.

ORTH 648 Clinical Orthodontics II**Credits 0 to 10. 0 to 10 Other Hours.**

Diagnosis and treatment of patients with a broad variety of malocclusions; patient with typical malocclusions and requiring early treatment, dentofacial orthopedics, orthognathic surgery, and interdisciplinary care are selected as educational models; techniques focus on standard edgewise technique including pretorqued and preangulated brackets and lingual orthodontics.

ORTH 649 Clinical Orthodontics III**Credits 0 to 10. 0 to 10 Other Hours.**

Diagnosis and treatment of patients with a broad variety of malocclusions; patient with typical malocclusions and requiring early treatment, dentofacial orthopedics, orthognathic surgery, and interdisciplinary care are selected as educational models; techniques focus on standard edgewise technique including pretorqued and preangulated brackets and lingual orthodontics.

ORTH 650 Clinical Orthodontics IV**Credits 0 to 10. 0 to 10 Other Hours.**

Diagnosis and treatment of patients with a broad variety of malocclusions; patients with typical malocclusions requiring early treatment, dentofacial orthopedics, orthognathic surgery, and interdisciplinary care are selected; emphasis on the edgewise appliances system with its many variations including pretorqued and preangulated brackets, self-ligation systems and lingual orthodontics.

ORTH 651 Clinical Orthodontics V**Credits 0 to 10. 0 to 10 Other Hours.**

Diagnosis and treatment of patients with a broad variety of malocclusions; patients with typical malocclusions requiring early treatment, dentofacial orthopedics, orthognathic surgery, and interdisciplinary care are selected; emphasis on the edgewise appliances system with its many variations including pretorqued and preangulated brackets, self-ligation systems and lingual orthodontics.

ORTH 652 Clinical Orthodontics VI**Credits 0 to 10. 0 to 10 Other Hours.**

Diagnosis and treatment of patients with a broad variety of malocclusions; patients with typical malocclusions requiring early treatment, dentofacial orthopedics, orthognathic surgery, and interdisciplinary care are selected; emphasis on the edgewise appliances system with its many variations including pretorqued and preangulated brackets, self-ligation systems and lingual orthodontics.

ORTH 653 Clinical Orthodontics VII**Credits 1 to 3. 1 to 3 Other Hours.**

Core clinical education of the orthodontic program; treatment of malocclusions requiring early treatment, dentofacial orthopedics, orthognathic surgery and multidisciplinary care are selected as educational models; structured, yet flexible, course outline to ensure familiarity with all aspects of contemporary clinical practice as presented by the various well-qualified clinical instructors; envisaged that no one treatment technique or philosophy will outrank another; complete orthodontic education is of the essence; broad range of appliance usage ranging from removable appliances to the more sophisticated fixed preangulated brackets and lingual orthodontics (018 and 022); clinics include the screening of potential orthodontic patients, underling the importance of obtaining ABO standard clinical records, complete case diagnosis, case analysis, treatment techniques, individualization of appliances, evidence-based treatment procedures, a pursuit of ABO treatment outcomes, as well as proven retention protocols; emphasis on the attendance of continuing in orthodontic private practice; a philosophy of continued learning encouraged; opportunity to consolidate the basic principles of case analysis and treatment planning, communication between clinician and patient, as well as interaction between different specialties to ensure competency in multidisciplinary treatment; planning for long-term esthetic, healthy, functional and stable treatment is the order of the day.

ORTH 654 Clinical Orthodontics VIII**Credits 1 to 3. 1 to 3 Other Hours.**

Core clinical education of the orthodontic program; treatment of malocclusions requiring early treatment, dentofacial orthopedics, orthognathic surgery and multidisciplinary care are selected as educational models; structured, yet flexible, course outline to ensure familiarity with all aspects of contemporary clinical practice as presented by the various well-qualified clinical instructors; envisaged that no one treatment technique or philosophy will outrank another; complete orthodontic education is of the essence; broad range of appliance usage ranging from removable appliances to the more sophisticated fixed preangulated brackets and lingual orthodontics (018 and 022); clinics include the screening of potential orthodontic patients, underling the importance of obtaining ABO standard clinical records, complete case diagnosis, case analysis, treatment techniques, individualization of appliances, evidence-based treatment procedures, a pursuit of ABO treatment outcomes, as well as proven retention protocols; emphasis on the attendance of continuing in orthodontic private practice; a philosophy of continued learning encouraged; opportunity to consolidate the basic principles of case analysis and treatment planning, communication between clinician and patient, as well as interaction between different specialties to ensure competency in multidisciplinary treatment; planning for long-term esthetic, healthy, functional and stable treatment is the order of the day.

ORTH 655 Clinical Orthodontics IX**Credits 1 to 3. 1 to 3 Other Hours.**

Core clinical education of the orthodontic program; treatment of malocclusions requiring early treatment, dentofacial orthopedics, orthognathic surgery and multidisciplinary care are selected as educational models; structured, yet flexible, course outline to ensure familiarity with all aspects of contemporary clinical practice as presented by the various well-qualified clinical instructors; envisaged that no one treatment technique or philosophy will outrank another; complete orthodontic education is of the essence; broad range of appliance usage ranging from removable appliances to the more sophisticated fixed preangulated brackets and lingual orthodontics (018 and 022); clinics include the screening of potential orthodontic patients, underling the importance of obtaining ABO standard clinical records, complete case diagnosis, case analysis, treatment techniques, individualization of appliances, evidence-based treatment procedures, a pursuit of ABO treatment outcomes, as well as proven retention protocols; emphasis on the attendance of continuing in orthodontic private practice; a philosophy of continued learning encouraged; opportunity to consolidate the basic principles of case analysis and treatment planning, communication between clinician and patient, as well as interaction between different specialties to ensure competency in multidisciplinary treatment; planning for long-term esthetic, healthy, functional and stable treatment is the order of the day.

ORTH 656 TMD Clinic VI**Credits 0. 0 Lecture Hours.**

Principles of diagnosis and treatment of TMJ disorders using anatomy, neurology, pathology of the TMJ, patient examination, principles of diagnosis, radiology, pharmacology, principles of non-surgical treatment, principles of intra-oral splints (types and indication for each); physical medicine modalities; diagnostic and therapeutic blocks for TMD; myofascial dysfunction. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: ORTH 601, ORTH 602, ORTH 603, ORTH 604 and ORTH 605.**ORTH 657 TMD Clinic VII****Credits 0. 0 Lecture Hours.**

Principles of diagnosis and treatment of TMJ disorders using anatomy, neurology, pathology of the TMJ, patient examination, principles of diagnosis, radiology, pharmacology, principles of non-surgical treatment, principles of intra-oral splints (types and indication for each); physical medicine modalities; diagnostic and therapeutic blocks for TMD; myofascial dysfunction. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: ORTH 601, ORTH 602, ORTH 603, ORTH 604 and ORTH 605.**ORTH 658 TMD Clinic VIII****Credits 0. 0 Lecture Hours.**

Principles of diagnosis and treatment of TMJ disorders using anatomy, neurology, pathology of the TMJ, patient examination, principles of diagnosis, radiology, pharmacology, principles of non-surgical treatment, principles of intra-oral splints (types and indication for each); physical medicine modalities; diagnostic and therapeutic blocks for TMD; myofascial dysfunction. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: ORTH 601, ORTH 602, ORTH 603, ORTH 604 and ORTH 605.**ORTH 659 TMD Clinic IX****Credits 0. 0 Lecture Hours.**

Principles of diagnosis and treatment of TMJ disorders using anatomy, neurology, pathology of the TMJ, patient examination, principles of diagnosis, radiology, pharmacology, principles of non-surgical treatment, principles of intra-oral splints (types and indication for each); physical medicine modalities; diagnostic and therapeutic blocks for TMD; myofascial dysfunction. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: ORTH 601, ORTH 602, ORTH 603, ORTH 604 and ORTH 605.**ORTH 689 Special Topics In...****Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of orthodontics. May be repeated for credit.

ORTH 691 Research**Credits 0 to 10. 0 to 10 Other Hours.**

Research for thesis or dissertation.

PEDD - Pediatric Dentistry

PEDD 611 Pediatric Dentistry I**Credits 3. 3 Other Hours.**

Basic techniques of pediatric dentistry, including restoration of primary teeth, behavior management, pulp therapy and assessment of the developing dentition.

PEDD 612 Pediatric Dentistry II**Credits 3. 3 Other Hours.**

A continuation of further topics in pediatric dentistry, including child development, treatment of traumatic injuries and appliance construction for space maintenance.

PEDD 613 Pediatric Dentistry III**Credits 3 to 3.5. 3 to 3.5 Other Hours.**

Focus on the assessment and treatment of developmental problems in the mixed dentition, materials used in pediatric dentistry and common oral lesions seen in the pediatric patient.

PEDD 614 Pediatric Dentistry IV**Credits 2.5. 2.5 Other Hours.**

This course investigates the developing dentition along with more advanced concepts in pediatric dentistry.

PEDD 615 Pediatric Dentistry V**Credits 4 to 5. 4 to 5 Other Hours.**

Investigates the developing dentition along with more advanced concepts in pediatric dentistry.

PEDD 616 Pediatric Dentistry VI**Credits 4. 4 Other Hours.**

Summary of topics in pediatric dentistry are presented, along with preparation for the American Board of Pediatric Dentistry.

PEDD 621 Hospital Dentistry I**Credits 2. 2 Other Hours.**

Introduction to hospital protocol, charting and the delivery of dental treatment to the medically compromised child.

PEDD 622 Hospital Dentistry II**Credits 2.5. 2.5 Other Hours.**

Introduction to conscious sedation and the treatment of traumatic injuries along with the delivery of dental care in the hospital environment.

PEDD 623 Hospital Dentistry III**Credits 3. 3 Other Hours.**

Evaluation and treatment of specific patient populations, including the neurologically handicapped and the medically compromised patient; additional introduction to clinical anesthesia for children.

PEDD 624 Hospital Dentistry IV**Credits 3.5. 3.5 Other Hours.**

Further study and literature review that supports the clinical practice of dental care for the special-needs child are presented in this course.

PEDD 625 Hospital Dentistry V**Credits 3 to 4. 3 to 4 Other Hours.**

Discussion of topics relevant to the care of the special-needs child and the delivery of pediatric dental care in the hospital setting.

PEDD 626 Hospital Dentistry VI**Credits 4. 4 Other Hours.**

This is intended to be a summary course that explores the interrelationship between medicine and dentistry in the care of pediatric patients.

PEDD 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of pediatric dentistry. May be repeated for credit.

PEDD 691 Research**Credits 0 to 10. 0 to 10 Other Hours.**

Research for thesis or dissertation.

PERF - Performance Studies

PERF 600 Graduate Scholarship in Performance Studies**Credits 3. 3 Lecture Hours.**

Overview of history, key issues, and major arguments in performance studies.

Prerequisites: Admission to the MA in Performance Studies or approval of instructor.

PERF 601 Theories of Performance Studies**Credits 3. 3 Lecture Hours.**

Overview of major theories of performance studies and related disciplines; also includes major critical and cultural theories that contribute to the field.

Prerequisites: Admission to the MA in Performance Studies or approval of instructor.

PERF 602 Research Methods in Performance Studies**Credits 3. 3 Lecture Hours.**

Examination and assessment of primary research methods in performance studies; emphasis on post-positivist methods; includes examination of ethical imperatives in research.

Prerequisite: Admission to the MA in Performance Studies or approval of instructor.

PERF 603 Performance, Power, and Identity**Credits 3. 3 Lecture Hours.**

Issues in, and production of, power and identity in expressive culture, examines how forms of power and varieties of social identity shape, and are shaped by, performance.

Prerequisites: PERF 600 or approval of instructor.

PERF 604 Performing Vernacular Culture**Credits 3. 3 Lecture Hours.**

Examines populist and counter-traditions in expressive culture; emphasis on contemporary cultures of performance and/as practices of everyday life.

Prerequisites: PERF 600 or approval of instructor.

PERF 605 Globalization and Performance**Credits 3. 3 Lecture Hours.**

Examination of global performances; theoretical and methodological approaches to globalization and/in performance and/as practices of everyday life.

Prerequisite: Graduate classification.

PERF 606 Performing Gender and Sexuality through Music**Credits 3. 3 Lecture Hours.**

Examination of how gendered and sexual identities are explored and contested through musical performance.

Prerequisite: Graduate classification.

PERF 607 Performance and Technology**Credits 3. 3 Lecture Hours.**

Exploration of the intersection of performance and technology; special emphasis on the impact of technology on aesthetics, social and political formations, and the body.

Prerequisite: Graduate classification.

PERF 608 Performance and the Art of Government**Credits 3. 3 Lecture Hours.**

Examination of performance in political processes and institutions; using the tools of performance studies to analyze and interpret the work of states and governments.

Prerequisite: Graduate classification.

PERF 610 Graduate Studies in Dance Research**Credits 3. 3 Lecture Hours.**

Examines key theoretical and methodological issues in dance studies from a performance studies perspective.

Prerequisite: PERF 602 or approval of instructor.

PERF 611 Religions, Spiritualities, and Performance**Credits 3. 3 Lecture Hours.**

Examines the intricate relationship between religious traditions and performance. Focus on contemporary religious movements.

Prerequisite: Graduate classification.

PERF 613 Performing Texas**Credits 3. 3 Lecture Hours.**

Explores "Texas" as a set of complex performances that construct specific identities and communities.

Prerequisite: Graduate classification.

PERF 614 Soundscapes**Credits 3. 3 Lecture Hours.**

Explores sound in social life; sound as performative of identity; sound performance.

Prerequisite: Graduate classification.

PERF 615 Spectacle and Performance**Credits 3. 3 Lecture Hours.**

Examination of various popular performances as spectacle.

Prerequisite: Graduate classification.

PERF 616 Sport as Performance**Credits 3. 3 Lecture Hours.**

Explores sport as manifold modes of cultural performance; focus on embodiment, gender, race, nationalism, spectacle, politics, warfare, and media.

Prerequisite: Graduate classification.**PERF 620 Critical Ethnographic Methods in Performance Studies****Credits 3. 3 Lecture Hours.**

Critical methods in performance ethnography; emphasis on political dimensions of field encounter. May be taken two times for credit.

Prerequisites: PERF 600; PERF 602.**PERF 621 Graduate Studies in Popular Music Research****Credits 3. 3 Lecture Hours.**

Examination of context, politics, and political economy of specific popular music forms.

Prerequisite: Graduation classification.**PERF 622 Performance and the Construction of American Identity****Credits 3. 3 Lecture Hours.**

Role of performance in construction of national identity; special emphasis on post-Civil War US.

Prerequisites: PERF 600, PERF 601, PERF 602, or approval of instructor.**PERF 623 Phenomenology and Music****Credits 3. 3 Lecture Hours.**

Theoretical and methodological potentials of phenomenology in analyses of music; special emphasis on use of phenomenology to examine multiple aspects of music production, including embodiment.

Prerequisites: PERF 600, PERF 601, PERF 602, or approval of instructor.**PERF 625 Latino/a Expressive Culture****Credits 3. 3 Lecture Hours.**

Explores how issues concerning Latinos, including race and ethnicity, religion, border politics, immigration, the drug war, family, gender and sexuality, and class, are reflected and debated through expressive forms of performance such as theater, comedy music, folklore and performance art.

Prerequisite: Acceptance into the MA in Performance Studies program or approval of instructor.**PERF 682 American Theatre: Gender on the U.S. Stage****Credits 3. 3 Lecture Hours.**

Focuses on 18th-21st century texts and performers in order to account for transformations in representations as well as lived experiences of gender.

Prerequisite: Enrollment in the MA in Performance Studies or approval of instructor.**PERF 685 Directed Studies****Credits 1 to 3. 1 to 3 Other Hours.**

Directed studies in specific areas of performance studies. Student may take up to two sections of directed studies in the same semester, with a maximum of 6 credits.

Prerequisites: PERF 600, PERF 601, PERF 602, or approval of instructor.**PERF 689 Special Topics in Performance Studies****Credits 3. 3 Lecture Hours.**

Selected topics in an identified area of performance studies. May be repeated for a total of 9 credits.

Prerequisites: PERF 600, PERF 601, PERF 602, or approval of instructor.**PERF 691 Research****Credits 1 to 3. 1 to 3 Other Hours.**

Research for thesis.

Prerequisites: Approval of department head.

PERI - Periodontics

PERI 600 Clinical Periodontics I**Credits 0. 0 Other Hours.**

Treatment and management of patients with various types and severities of periodontal diseases; emphasis on diagnosis, treatment planning, prognosis and fundamental periodontal instrumentation skills; introduction of periodontal surgical techniques. Must be taken on a satisfactory/unsatisfactory basis.

PERI 601 Clinical Periodontics II**Credits 0. 0 Other Hours.**

Treatment and management of patients with various types and severities of periodontal diseases; emphasis on diagnosis, treatment planning, prognosis and fundamental periodontal instrumentation skills; introduction of periodontal surgical techniques. Must be taken on a satisfactory/unsatisfactory basis.

PERI 602 Clinical Periodontics III**Credits 0. 0 Other Hours.**

Treatment and management of patients with various types and severities of periodontal diseases; emphasis on diagnosis, treatment planning, prognosis and fundamental periodontal instrumentation skills; introduction of periodontal surgical techniques. Must be taken on a satisfactory/unsatisfactory basis.

PERI 603 Advanced Clinical Periodontics I**Credits 0. 0 Other Hours.**

Prerequisite: Clinical Periodontics 5004. Continuation of first-year clinic; emphasis on management of advanced periodontal cases; complex surgical techniques with emphasis on pre-prosthetic and mucogingival surgery. Must be taken on a satisfactory/unsatisfactory basis.

PERI 604 Advanced Clinical Periodontics II**Credits 0. 0 Other Hours.**

Prerequisite: Clinical Periodontics 5004. Continuation of first-year clinic; emphasis on management of advanced periodontal cases; complex surgical techniques with emphasis on pre-prosthetic and mucogingival surgery. Must be taken on a satisfactory/unsatisfactory basis.

PERI 605 Advanced Clinical Periodontics III**Credits 0. 0 Other Hours.**

Prerequisite: Clinical Periodontics 5004. Continuation of first-year clinic; emphasis on management of advanced periodontal cases; complex surgical techniques with emphasis on pre-prosthetic and mucogingival surgery. Must be taken on a satisfactory/unsatisfactory basis.

PERI 606 Advanced Clinical Periodontics IV**Credits 0. 0 Other Hours.**

A continuation of PER 5005; more student autonomy and decision-making is required, assuring proficiency; demonstration of surgical techniques to first- and second-year students is encouraged; emphasis is placed on advanced implant and esthetic cases; includes surgical cases at the Dallas VA Medical Center, Children's Medical Center of Dallas and Texas Scottish Rite Hospital for Children. Must be taken on a satisfactory/unsatisfactory basis.

PERI 607 Advanced Clinical Periodontics V**Credits 0. 0 Other Hours.**

A continuation of PER 5005; more student autonomy and decision-making is required, assuring proficiency; demonstration of surgical techniques to first- and second-year students is encouraged; emphasis is placed on advanced implant and esthetic cases; includes surgical cases at the Dallas VA Medical Center, Children's Medical Center of Dallas and Texas Scottish Rite Hospital for Children. Must be taken on a satisfactory/unsatisfactory basis.

PERI 608 Advanced Clinical Periodontics VI**Credits 0. 0 Other Hours.**

A continuation of PER 5005; more student autonomy and decision-making is required, assuring proficiency; demonstration of surgical techniques to first- and second-year students is encouraged; emphasis is placed on advanced implant and esthetic cases; includes surgical cases at the Dallas VA Medical Center, Children's Medical Center of Dallas and Texas Scottish Rite Hospital for Children. Must be taken on a satisfactory/unsatisfactory basis.

PERI 609 Clinical Stomatology I**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community.

PERI 610 Clinical Stomatology II**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community.

PERI 611 Clinical Stomatology III**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community.

PERI 612 Clinical Stomatology IV**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community.

PERI 613 Clinical Stomatology V**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community.

PERI 614 Clinical Stomatology VI**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community.

PERI 615 Advanced Clinical Stomatology I**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community; guidance in management of oral mucocutaneous diseases to selected predoctoral students and first-year graduate students.

PERI 616 Advanced Clinical Stomatology II**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community; guidance in management of oral mucocutaneous diseases to selected predoctoral students and first-year graduate students.

PERI 617 Advanced Clinical Stomatology III**Credits 0-1. 0-1 Other Hours.**

Emphasis is placed on the diagnosis and clinical management of patients with oral mucocutaneous diseases; proper evaluation of medical histories, drug interactions and laboratory studies is stressed through close interaction with the medical community; guidance in management of oral mucocutaneous diseases to selected predoctoral students and first-year graduate students.

PERI 618 Dermatology**Credits 0. 0 Other Hours.**

A review of basic dermatological terminology, common cutaneous diseases and their treatment; presented every third year. Must be taken on a satisfactory/unsatisfactory basis.

PERI 619 Journal Club I**Credits 0. 0 Lecture Hours.**

Reviews current periodontal literature and encompasses analytical review interpretation and abstraction of articles; discussions and review also allow translation of contemporary periodontal principles to clinical patient care. Must be taken on a satisfactory/unsatisfactory basis.

PERI 620 Journal Club II**Credits 0. 0 Lecture Hours.**

Reviews current periodontal literature and encompasses analytical review interpretation and abstraction of articles; discussions and review also allow translation of contemporary periodontal principles to clinical patient care. Must be taken on a satisfactory/unsatisfactory basis.

PERI 621 Journal Club III**Credits 0. 0 Lecture Hours.**

Reviews current periodontal literature and encompasses analytical review interpretation and abstraction of articles; discussions and review also allow translation of contemporary periodontal principles to clinical patient care. Must be taken on a satisfactory/unsatisfactory basis.

PERI 622 Journal Club IV**Credits 0. 0 Lecture Hours.**

Reviews current periodontal literature and encompasses analytical review interpretation and abstraction of articles; discussions and review also allow translation of contemporary periodontal principles to clinical patient care. Must be taken on a satisfactory/unsatisfactory basis.

PERI 623 Journal Club V**Credits 0. 0 Lecture Hours.**

Reviews current periodontal literature and encompasses analytical review interpretation and abstraction of articles; discussions and review also allow translation of contemporary periodontal principles to clinical patient care. Must be taken on a satisfactory/unsatisfactory basis.

PERI 624 Journal Club VI**Credits 0. 0 Lecture Hours.**

Reviews current periodontal literature and encompasses analytical review interpretation and abstraction of articles; discussions and review also allow translation of contemporary periodontal principles to clinical patient care. Must be taken on a satisfactory/unsatisfactory basis.

PERI 625 Orthodontics/Periodontics Seminar**Credits 0. 0 Other Hours.**

Diagnosis and treatment of basic orthodontic problems; force vectors; mechanical applications with various orthodontics systems; clinical management of combined periodontic/orthodontic cases and esthetic correction of mucogingival cases; joint treatment of actual cases.

PERI 626 Related Disciplines Seminar**Credits 0. 0 Other Hours.**

Seminar for first-, second- and third-year residents that includes comprehensive interdisciplinary case planning, management and presentations, and affords opportunity for interactions with graduate faculty/residents in periodontics, prosthodontics and endodontics.

PERI 627 Mock Board Examination I**Credits 0.5. 0.5 Lecture Hours.**

Prepares students for certification by the American Board of Periodontology; includes case write-up, presentation and comprehensive oral examination.

PERI 628 Mock Board Examination II**Credits 0.5. 0.5 Lecture Hours.**

Prepares students for certification by the American Board of Periodontology; includes case write-up, presentation and defense, and comprehensive oral examination.

PERI 629 Advanced Dental Implants**Credit 1.5. 0.8 Lecture Hours. 0.8 Other Hours.**

A lecture and clinical course covering advanced implant techniques; radiographic examination, diagnosis, treatment planning, and management of patients with jaw deformities, inadequate remaining bone; ridge augmentation requirements, including sinus lift procedures and complications, are reviewed.

PERI 630 Periodontal Plastic Surgery**Credits 0.5. 0.3 Lecture Hours. 0.3 Other Hours.**

Lectures and seminars covering the diagnosis and treatment of esthetic and functional gingival deformities; recognizing normal and abnormal appearance and gingival discrepancies is stressed; current techniques of grafting, shaping and sculpting tissues are taught; techniques discussed are performed during clinical periodontics.

PERI 631 Case Presentation/Treatment Planning I**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Emphasizes diagnosis, analysis and treatment planning/approaches for cases presenting with moderate to advanced periodontitis, soft/hard tissue deficiencies and/or dental implant needs; first-year residents receive instruction and experience in preparing case presentations, and first-, second- and third-year residents present cases, participate in discussions and interact with faculty.

PERI 632 Case Presentation/Treatment Planning II**Credits 0.5-1. 0.5-1 Other Hours.**

5 to 1. Emphasizes diagnosis, analysis and treatment planning/approaches for cases presenting with moderate to advanced periodontitis, soft/hard tissue deficiencies and/or dental implant needs; first-year residents receive instruction and experience in preparing case presentations, and first-, second- and third-year residents present cases, participate in discussions and interact with faculty.

PERI 633 Case Presentation/Treatment Planning III**Credits 0.5-1. 0.5-1 Other Hours.**

5 to 1. Emphasizes diagnosis, analysis and treatment planning/approaches for cases presenting with moderate to advanced periodontitis, soft/hard tissue deficiencies and/or dental implant needs; first-year residents receive instruction and experience in preparing case presentations, and first-, second- and third-year residents present cases, participate in discussions and interact with faculty.

PERI 634 Case Presentation/Treatment Planning IV**Credits 0.5-1. 0.5-1 Other Hours.**

5 to 1. Emphasizes diagnosis, analysis and treatment planning/approaches for cases presenting with moderate to advanced periodontitis, soft/hard tissue deficiencies and/or dental implant needs; first-year residents receive instruction and experience in preparing case presentations, and first-, second- and third-year residents present cases, participate in discussions and interact with faculty.

PERI 635 Case Presentation/Treatment Planning V**Credits 0.5-1. 0.5-1 Other Hours.**

5 to 1. Emphasizes diagnosis, analysis and treatment planning/approaches for cases presenting with moderate to advanced periodontitis, soft/hard tissue deficiencies and/or dental implant needs; first-year residents receive instruction and experience in preparing case presentations, and first-, second- and third-year residents present cases, participate in discussions and interact with faculty.

PERI 636 Case Presentation/Treatment Planning VI**Credits 0.5-1. 0.5-1 Other Hours.**

5 to 1. Emphasizes diagnosis, analysis and treatment planning/approaches for cases presenting with moderate to advanced periodontitis, soft/hard tissue deficiencies and/or dental implant needs; first-year residents receive instruction and experience in preparing case presentations, and first-, second- and third-year residents present cases, participate in discussions and interact with faculty.

PERI 637 Occlusion: Principals/Therapy I**Credits 0 to 1.5. 0 to 1.5 Other Hours.**

5. Review of literature concerning occlusion and its relationship to periodontal disease; clinical evaluation, diagnosis of occlusal trauma and treatment of patients with occlusal disharmonies via occlusal adjustment are discussed; includes a review of occlusal concepts related to periodontics, anatomy and function of the masticatory system, temporomandibular joint dysfunction, and adjustment of the natural dentition.

PERI 638 Occlusion: Principals/Therapy II**Credits 0 to 1.5. 0 to 1.5 Other Hours.**

5. Review of literature concerning occlusion and its relationship to periodontal disease; clinical evaluation, diagnosis of occlusal trauma and treatment of patients with occlusal disharmonies via occlusal adjustment are discussed; includes a review of occlusal concepts related to periodontics, anatomy and function of the masticatory system, temporomandibular joint dysfunction, and adjustment of the natural dentition.

PERI 639 Periodontal Lecture Series I**Credits 0 to 2. 0 to 2 Other Hours.**

Principles of basic science of periodontology, including anatomy of the periodontium, and the classification, etiology and pathogenesis of periodontal diseases, including plaque associated and nonplaque-related disorders; provides an introduction to the clinical practice of periodontics and stomatology, including diagnosis, prognosis, treatment planning, basic flap design, instrumentation, therapeutic approaches, suturing techniques and wound healing; oral hygiene methods and principles of oral hygiene instruction are also presented.

PERI 640 Periodontal Lecture Series II**Credits 0 to 2. 0 to 2 Other Hours.**

Principles of basic science of periodontology, including anatomy of the periodontium, and the classification, etiology and pathogenesis of periodontal diseases, including plaque associated and nonplaque-related disorders; provides an introduction to the clinical practice of periodontics and stomatology, including diagnosis, prognosis, treatment planning, basic flap design, instrumentation, therapeutic approaches, suturing techniques and wound healing; oral hygiene methods and principles of oral hygiene instruction are also presented.

PERI 641 Periodontal Lecture Series III**Credits 0 to 2. 0 to 2 Other Hours.**

Principles of basic science of periodontology, including anatomy of the periodontium, and the classification, etiology and pathogenesis of periodontal diseases, including plaque associated and nonplaque-related disorders; provides an introduction to the clinical practice of periodontics and stomatology, including diagnosis, prognosis, treatment planning, basic flap design, instrumentation, therapeutic approaches, suturing techniques and wound healing; oral hygiene methods and principles of oral hygiene instruction are also presented.

PERI 642 Periodontal Lecture Series IV**Credits 0 to 2. 0 to 2 Other Hours.**

Principles of basic science of periodontology, including anatomy of the periodontium, and the classification, etiology and pathogenesis of periodontal diseases, including plaque associated and nonplaque-related disorders; provides an introduction to the clinical practice of periodontics and stomatology, including diagnosis, prognosis, treatment planning, basic flap design, instrumentation, therapeutic approaches, suturing techniques and wound healing; oral hygiene methods and principles of oral hygiene instruction are also presented.

PERI 643 Periodontal Lectures Series V**Credits 2. 2 Lecture Hours.**

Advanced management of complex periodontal and stomatological problems is presented; in-depth review of systemic diseases, and plaque associated and nonplaque-related periodontal disorders (mucocutaneous, etc.) related to the practice of periodontics is emphasized, including the roles of pharmacotherapeutics and complex regenerative therapeutic approaches.

PERI 644 Practice Teaching I**Credits 1 to 2. 1 to 2 Other Hours.**

Second year residents give clinical instruction involving contact with second-, third- and fourth- year dental students; four hours per week per semester of clinical instruction, including diagnosis, treatment and maintenance of periodontal patients; one half-day/session/week for 2nd year residents (afternoon); register for two semesters for a total of 8 semester hours.

PERI 645 Practice Teaching II**Credits 1 to 2. 1 to 2 Other Hours.**

Second year residents give clinical instruction involving contact with second-, third- and fourth- year dental students; four hours per week per semester of clinical instruction, including diagnosis, treatment and maintenance of periodontal patients; one half-day/session/week for 2nd year residents (afternoon); register for two semesters for a total of 8 semester hours.

PERI 646 Practice Teaching III**Credits 1 to 2. 1 to 2 Other Hours.**

Second year residents give clinical instruction involving contact with second-, third- and fourth- year dental students; four hours per week per semester of clinical instruction, including diagnosis, treatment and maintenance of periodontal patients; one half-day/session/week for 2nd year residents (afternoon); register for two semesters for a total of 8 semester hours.

PERI 647 Practice Teaching IV**Credits 2. 2 Other Hours.**

Third year residents give lectures and clinical instruction involving contact with second, third, and fourth year dental students; six hours per week per semester of clinical instruction, including diagnosis, treatment and maintenance of periodontal patients; two half-day sessions/week for 3rd year residents (one morning and one afternoon); register for two semesters for a total of 8 semester hours.

PERI 648 Practice Teaching V**Credits 2. 2 Other Hours.**

Third year residents give lectures and clinical instruction involving contact with second, third, and fourth year dental students; six hours per week per semester of clinical instruction, including diagnosis, treatment and maintenance of periodontal patients; two half-day sessions/week for 3rd year residents (one morning and one afternoon); register for two semesters for a total of 8 semester hours.

PERI 649 Practice Teaching VI**Credits 2. 2 Other Hours.**

Third year residents give lectures and clinical instruction involving contact with second, third, and fourth year dental students; six hours per week per semester of clinical instruction, including diagnosis, treatment and maintenance of periodontal patients; two half-day sessions/week for 3rd year residents (one morning and one afternoon); register for two semesters for a total of 8 semester hours.

PERI 650 Dental Implants**Credits 1.50 to 2. 1.50 to 2 Other Hours.**

5-2. Historical review of dental implants, including biological principles, techniques and systems; diagnosis, interdisciplinary considerations, treatment planning, and indications and contraindications for implants; wound healing for implants, including osseointegration, surgical techniques and implant maintenance.

PERI 651 Periodontal Literature Review I**Credits 1 to 2. 1 to 2 Lecture Hours.**

Review of periodontics literature from early classic articles to current publications; development of basis for various periodontal concepts; anatomy, epidemiology, etiology, diagnosis, pathogenesis and therapy of periodontal diseases; register for two semesters for a total of 4 semester hours.

PERI 652 Periodontal Literature Review II**Credits 1 to 2. 1 to 2 Lecture Hours.**

Review of periodontics literature from early classic articles to current publications; development of basis for various periodontal concepts; anatomy, epidemiology, etiology, diagnosis, pathogenesis and therapy of periodontal diseases; register for two semesters for a total of 4 semester hours.

PERI 653 Periodontal Literature Review III**Credits 1 to 2. 1 to 2 Lecture Hours.**

Review of periodontics literature from early classic articles to current publications; development of basis for various periodontal concepts; anatomy, epidemiology, etiology, diagnosis, pathogenesis and therapy of periodontal diseases; register for two semesters for a total of 4 semester hours.

PERI 654 Periodontal Literature Review IV**Credits 1 to 2. 1 to 2 Other Hours.**

Students register for two semesters for a total of 4 semester hours.

PERI 655 Periodontal Literature Review V**Credits 1 to 2. 1 to 2 Other Hours.**

Students register for two semesters for a total of 4 semester hours.

PERI 656 Periodontal Literature Review VI**Credits 1 to 2. 1 to 2 Other Hours.**

Students register for two semesters for a total of 4 semester hours.

PERI 657 Periodontal Literature Review VII**Credits 1 to 2. 1 to 2 Other Hours.**

Seminar series during the third year of residency; learn to select and then research various contemporary topics and lead group discussions; use of computer search technology and interlibrary facilities is taught and utilized; self-reliance and individual effort is emphasized instead of school-provided reading lists as in PER 5224 and PER 5227; register for two semesters for a total of 4 semester hours.

PERI 658 Periodontal Literature Review VIII**Credits 1 to 2. 1 to 2 Other Hours.**

Seminar series during the third year of residency; learn to select and then research various contemporary topics and lead group discussions; use of computer search technology and interlibrary facilities is taught and utilized; self-reliance and individual effort is emphasized instead of school-provided reading lists as in PER 5224 and PER 5227; register for two semesters for a total of 4 semester hours.

PERI 659 Periodontal Literature Review IX**Credits 1 to 2. 1 to 2 Other Hours.**

Seminar series during the third year of residency; learn to select and then research various contemporary topics and lead group discussions; use of computer search technology and interlibrary facilities is taught and utilized; self-reliance and individual effort is emphasized instead of school-provided reading lists as in PER 5224 and PER 5227; register for two semesters for a total of 4 semester hours.

PERI 660 Clinical Anesthesiology for the Periodontist**Credits 3. 3 Other Hours.**

A one-month anesthesiology rotation supervised by personnel in the Department of Anesthesiology at Baylor University Medical Center; operating room procedures; use of anesthetics; instruction in resuscitative procedures.

PERI 661 Moderate Parenteral Conscious Sedation I**Credits 0.5. 0.5 Other Hours.**

Focus on clinical management of patients needing conscious sedation; lectures include information on deep sedation and general anesthesia so residents will be familiar with these levels should a patient get to one of these planes of anesthesia; ongoing each fall and spring semester of a resident's three year academic degree plan.

PERI 662 Moderate Parenteral Conscious Sedation II**Credits 0.5. 0.5 Other Hours.**

Focus on clinical management of patients needing conscious sedation; lectures include information on deep sedation and general anesthesia so residents will be familiar with these levels should a patient get to one of these planes of anesthesia; ongoing each fall and spring semester of a resident's three year academic degree plan.

PERI 663 Moderate Parenteral Conscious Sedation III**Credits 0.5. 0.5 Other Hours.**

Focus on clinical management of patients needing conscious sedation; lectures include information on deep sedation and general anesthesia so residents will be familiar with these levels should a patient get to one of these planes of anesthesia; ongoing each fall and spring semester of a resident's three year academic degree plan.

PERI 664 Moderate Parenteral Conscious Sedation IV**Credits 0.5. 0.5 Other Hours.**

Focus on clinical management of patients needing conscious sedation; lectures include information on deep sedation and general anesthesia so residents will be familiar with these levels should a patient get to one of these planes of anesthesia; ongoing each fall and spring semester of a resident's three year academic degree plan.

PERI 665 Moderate Parenteral Conscious Sedation V**Credits 0.5. 0.5 Other Hours.**

Focus on clinical management of patients needing conscious sedation; lectures include information on deep sedation and general anesthesia so residents will be familiar with these levels should a patient get to one of these planes of anesthesia; ongoing each fall and spring semester of a resident's three year academic degree plan.

PERI 666 Moderate Parenteral Conscious Sedation VI**Credits 0.5. 0.5 Other Hours.**

Focus on clinical management of patients needing conscious sedation; lectures include information on deep sedation and general anesthesia so residents will be familiar with these levels should a patient get to one of these planes of anesthesia; ongoing each fall and spring semester of a resident's three year academic degree plan.

PERI 667 Periodontal Histopathology**Credits 2. 1 Lab Hour. 1 Other Hour.**

Histopathologic study of the etiology and pathogenesis of periodontal diseases; seminars and laboratory exercises with block sections of human periodontium.

PERI 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of periodontics. May be repeated for credit.

PERI 691 Research**Credits 0 to 10. 0 to 10 Other Hours.**

Research for thesis or dissertation.

PETE - Petroleum Engineering

PETE 602 Well Stimulation

Credits 3. 3 Lecture Hours.

Design and analysis of well stimulation methods, including acidizing and hydraulic fracturing; causes and solutions to low well productivity.

PETE 603 Advanced Reservoir Engineering I

Credits 3. 3 Lecture Hours.

Petroleum reservoir simulation basics including solution techniques for explicit problems.

PETE 604 Advanced Reservoir Engineering II

Credits 3. 3 Lecture Hours.

Advanced petroleum reservoir simulation with generalized methods of solution for implicit problems.

Prerequisite: PETE 603.

PETE 605 Phase Behavior of Petroleum Reservoir Fluids

Credits 3. 3 Lecture Hours.

Pressure, volume, temperature, composition relationships of petroleum reservoir fluids.

PETE 606 EOR Methods--Thermal

Credits 3. 3 Lecture Hours.

Fundamentals of enhanced oil recovery (EOR) methods and applications of thermal recovery methods.

Prerequisite: PETE 323.

PETE 608 Well Logging Methods

Credits 3. 3 Lecture Hours.

Well logging methods for determining nature and fluid content of formations penetrated by drilling. Development of computer models for log analysis.

PETE 609 Enhanced Oil Recovery Processes

Credits 3. 3 Lecture Hours.

Fundamentals and theory of enhanced oil recovery; polymer flooding, surfactant flooding, miscible gas flooding and steam flooding; application of fractional flow theory; strategies and displacement performance calculations.

Prerequisite: PETE 323.

PETE 611 Application of Petroleum Reservoir Simulation

Credits 3. 3 Lecture Hours.

Use of simulators to solve reservoir engineering problems too complex for classical analytical techniques.

Prerequisites: PETE 400 and PETE 401.

PETE 612 Unconventional Oil and Gas Reservoirs

Credits 3. 3 Lecture Hours.

As conventional oil and gas resources are depleted, unconventional resources, including heavy oil and gas from low-permeability sandstones, fractured shales, coal bed, and hydrates, will assume greater roles in meeting USA and world energy demands; this course emphasizes resources, geologic and geographic occurrences, recovery technology and economics of unconventional hydrocarbon resources.

Prerequisite: Graduate classification in petroleum engineering, geology or geophysics.

PETE 613 Natural Gas Engineering

Credits 3. 3 Lecture Hours.

Flow of natural gas in reservoirs and in wellbores and gathering systems; deliverability testing; production forecasting and decline curves; flow measurement and compressor sizing.

Prerequisites: PETE 323 and PETE 324.

PETE 614 Master Graduate Student Paper Contest

Credits 0. 0 Lecture Hours.

No Credit. Presentation of a technical petroleum engineering topic judged by petroleum professionals at the master graduate level department student paper contest.

Prerequisite: Master level graduate classification.

PETE 615 Doctoral Student Paper Contest

Credits 0. 0 Lecture Hours.

No Credit. Presentation of a technical petroleum engineering topic judged by petroleum professionals at the PhD graduate level department student paper contest.

Prerequisite: PhD graduate classification.

PETE 616 Engineering Near-Critical Reservoirs

Credits 3. 3 Lecture Hours.

Identification of reservoir fluid type; calculation of original gas in place, original oil in place, reserves and future performance of retrograde gas and volatile oil reservoirs.

Prerequisites: PETE 323, PETE 400, PETE 401.

PETE 617 Petroleum Reservoir Management

Credits 3. 3 Lecture Hours.

The principles of reservoir management and application to specific reservoirs based on case studies presented in the petroleum literature.

PETE 618 Modern Petroleum Production

Credits 3. 3 Lecture Hours.

An advanced treatment of modern petroleum production engineering encompassing well deliverability from vertical, horizontal and multilateral/multibranch wells; diagnosis of well performance includes elements of well testing and production logging; in this course the function of the production engineer is envisioned in the context of well design, stimulation and artificial lift.

PETE 619 Naturally Fractured Reservoirs

Credits 3. 3 Lecture Hours.

Explore all relevant subject matter in naturally fractured reservoirs; naturally fractured reservoirs are commonplace throughout the world, however there is a general lack of understanding of such reservoirs; provides the background for all relevant topics such as characterization, fluid flow, simulation and enhanced oil recovery.

Prerequisite: Approval of instructor.

PETE 620 Fluid Flow in Petroleum Reservoirs

Credits 3. 3 Lecture Hours.

Analysis of fluid flow in bounded and unbounded reservoirs, wellbore storage, phase redistribution, finite and infinite conductivity fractures; dual-porosity systems.

Prerequisite: PETE 323.

PETE 621 Petroleum Development Strategy

Credits 3. 3 Lecture Hours.

Applications of the variables, models and decision criteria used in modern petroleum development; case approach used to study major projects such as offshore development and assisted recovery; both commercial and student-prepared computer software used during the lab sessions to practice methods.

PETE 622 Exploration and Production Evaluation

Credits 3. 3 Lecture Hours.

Selected topics in oil industry economic evaluation including offshore bidding, project ranking and selection, capital budgeting, long-term oil and gas field development projects and incremental analysis for assisted recovery and acceleration.

PETE 623 Waterflooding**Credits 3. 3 Lecture Hours.**

Design, surveillance and project management of waterfloods in reservoirs.

Prerequisite: PETE 323.**PETE 624 Rock Mechanic Aspects of Petroleum Reservoir Response****Credits 3. 3 Lecture Hours.**

Reservoir rocks and their physical behavior; porous media and fracture flow models; influence of rock deformability, stress, fluid pressure and temperature.

Prerequisite: PETE 604.**PETE 625 Well Control****Credits 3. 3 Lecture Hours.**

Theory of pressure control in drilling operations and during well kicks; abnormal pressure detection and fracture gradient determination; casing setting depth selection and advanced casing design; theory supplemented on well control simulators.

Prerequisites: PETE 411.**PETE 626 Offshore Drilling****Credits 3. 3 Lecture Hours.**

Offshore drilling from fixed and floating drilling structures; directional drilling including horizontal drilling; theory of deviation monitoring and control.

Prerequisite: PETE 411.**PETE 627 Well Completion and Workover****Credits 3. 3 Lecture Hours.**

Development of design options, systems and procedures to meet deliverability, safety and integrity requirements for completions and workover equipment; overview of methods in the oil and gas industry; function and design criteria of well components.

Prerequisite: Graduate classification.**PETE 628 Horizontal Drilling****Credits 3. 3 Lecture Hours.**

Changing a wellbore from vertical to horizontal; long- and short-radius horizontal wells; bottomhole assemblies for achieving and maintaining control of inclination and direction; drilling fluids; torque and drag calculations; transport of drilled solids.

Prerequisite: PETE 411.**PETE 629 Advanced Hydraulic Fracturing****Credits 3. 3 Lecture Hours.**

Physical principles and engineering methods involved in hydraulic fracturing; an advanced treatise integrating the necessary fundamentals from elasticity theory, fracture mechanics and fluid mechanics to understand designs, optimization and evaluate hydraulic fracturing treatments including special topics such as high permeability fracturing and deviated well fracturing.

PETE 630 Geostatistics**Credits 3. 3 Lecture Hours.**

Introductory and advanced concepts in geostatistics for petroleum reservoir characterization by integrating static (cores/logs/seismic traces) and dynamic (flow/transport) data; variograms and spatial correlations; regionalized variables; intrinsic random functions; kriging/cokriging; conditional simulation; non-Gaussian approaches.

Prerequisite: Introductory course in statistics or PETE 322.**PETE 631 Petroleum Reservoir Description****Credits 3. 3 Lecture Hours.**

Engineering and geological evaluation techniques to define the extent and internal character of a petroleum reservoir; estimate depositional environment(s) during the formation of the sedimentary section and resulting effects on reservoir character.

Prerequisites: PETE 324 and PETE 620.**PETE 632 Physical and Engineering Properties of Rock****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Physical and engineering properties of rock and rock masses including strength, deformation, fluid flow, thermal and electrical properties as a function of the subsurface temperature, in-situ stress, pore fluid pressure and chemical environment; relationship of rock properties to logging, siting and design of wells and structures in rock.

PETE 633 Data Integration for Petroleum Reservoirs**Credits 3. 3 Lecture Hours.**

Introduction and application of techniques that can be used to incorporate dynamic reservoir behavior into stochastic reservoir characterizations; dynamic data in the form of pressure transient tests, tracer tests, multiphase production histories or interpreted 4-D seismic information.

Prerequisites: PETE 620; STAT 601.**PETE 635 Underbalanced and Managed Pressure Drilling****Credits 3. 3 Lecture Hours.**

This course provides an introduction and application of techniques utilized in underbalanced and managed pressure drilling; includes equipment, types of drilling fluids used (air, mist foam, etc.), flow drilling, mud cap drilling and hydraulics calculations.

Prerequisite: Graduate classification.**PETE 636 Horizontal, Multilateral and Intelligent Wells****Credits 3. 3 Lecture Hours.**

Advanced well architectures, primarily horizontal, multilateral and intelligent wells, all aspects of these types of wells, including well completions, reservoir flow, and wellbore flow conditions, and well deliverability; optimization of well design and field applications will be demonstrated with field cases.

Prerequisites: PETE 662; graduate classification.**PETE 637 Streamline Simulation****Credits 3. 3 Lecture Hours.**

Introductory and advanced concepts in streamline simulation and its applications; theory of streamlines/streamtubes in multidimensions; topics include: streamline, streamtubes, streamfunctions, transport along streamlines, spatial discretization and material balance, time stepping and transverse fluxes, impact of cell geometry, history matching and production data integration, comparison with finite difference.

Prerequisite: Graduate classification.**PETE 638 Production Logging****Credits 3. 3 Lecture Hours.**

Well logging methods concerned with problem well diagnosis and reservoir surveillance; includes fluid flow in pipes, understanding fluid dynamics in a wellbore, theoretical basis of production logging techniques, production log interpretation techniques, and operational considerations.

Prerequisite: Graduate classification.

PETE 639 High Performance Drilling Design and Operational Practices
Credits 3. 3 Lecture Hours.

Achieving differentiating drilling performance in most complex wells; includes physics of each type of performance limiter, real time operational practices, engineering redesign practices, and effective workflows to achieve the required change in engineering and operational practices.

Prerequisites: Graduate classification, PETE 355 or PETE 661 or approval of instructor.

PETE 640 Models for Simulation of Flow and Transport of Fluids and Heat in Porous Media

Credits 4. 3 Lecture Hours. 3 Lab Hours.

Design and develop numerical simulators that describe flow of reservoir fluids and transport of heat through porous media; develop multi-dimensional models capable of handling single mass components (gas, oil or water) in single phases (liquid or vapor).

Prerequisites: PETE 603 or approval of instructor; experience in FORTRAN or another programming language; solid understanding of physical processes of flow and transport through porous media, numerical analysis and linear algebra; graduate classification.

PETE 641 Models for Simulation of Advanced Coupled Processes in Geologic Media

Credits 4. 3 Lecture Hours. 3 Lab Hours.

Design and develop advanced multi-phase flow processes and complex geologic media (porous and fractured, with matrix-fracture interactions); structured and unstructured grids, multiple mass components (gas, oil and water) in multi-phase states (liquid, vapor and/or liquid-vapor), and phase changes.

Prerequisites: PETE 640 and graduate classification; experience in FORTRAN95, C, C++ or another programming language; solid understanding of physical processes of flow and transport through porous media, numerical analysis and linear algebra.

PETE 642 Formation Damage: Mechanisms and Remediation

Credits 3. 3 Lecture Hours.

Identification and development of solutions for mechanisms of formation damage that can occur during drilling, completion, and following chemical treatments; includes interaction of cleaning fluids with the formation brines, rock and oil.

Prerequisites: Graduate classification.

PETE 643 Oil Field Chemistry

Credits 3. 3 Lecture Hours.

The role of chemistry in well stimulation, water shut-off treatments, scale removal, mitigation, downhole corrosion issues, organic deposition, dementing, drilling fluids and various aspects of formation damage; includes problem identification as the first step in designing chemical treatment to remove formation damage.

Prerequisites: Graduate classification.

PETE 644 CO₂ Capture and Uses: Sequestration, Enhanced Oil Recovery (EOR)

Credits 3. 3 Lecture Hours.

Understanding the need and potential of CO₂ captures and uses, including sequestration and Enhanced Oil Recovery (CCS-EOR), the scientific, technological and economic aspects of identifying and implementing a CCS-EOR; overview of safety, environmental and legal aspects.

Prerequisites: Graduate classification.

PETE 645 Upscaling of Geologic Models for Flow Simulation

Credits 3. 3 Lecture Hours.

In-depth understanding of current approaches to upscaling of 3D geologic models for reservoir flow simulation; includes development of upscaling solvers.

Prerequisites: Graduate classification.

PETE 646 Reservoir Characterization and Forecasting

Credits 3. 3 Lecture Hours.

Emphasis on geostatistical estimation/simulation and advanced mathematical inversion methods; integration of three important aspects of reservoir development and management including i) stochastic reservoir description, ii) reservoir model updating; and iii) model-predictive reservoir control and management.

Prerequisites: Graduate classification; basic familiarity with linear algebra, probability, statistics, differential and integral calculus and general reservoir engineering.

PETE 647 Petroleum Thermodynamics

Credits 3. 3 Lecture Hours.

Understanding the principles of bulk equilibrium, bulk non-equilibrium, interfacial and thin-film thermodynamics in relation to hydrocarbon reservoirs; application in shale gas, shale light oil, heavy oil production, CO₂ injection in light and heavy oils, and phase-splitting calculations; complex diffusion processes and species distribution in hydrocarbon reservoirs from irreversible thermodynamics.

Prerequisite: Graduate classification or approval of instructor.

PETE 648 Pressure Transient Testing

Credits 3. 3 Lecture Hours.

Diffusivity equation and solutions for slightly compressible liquids; dimensionless variables; type curves; applications of solutions to buildup, drawdown, multi-rate, interference, pulse and deliverability tests; extensions to multiphase flow; analysis of hydraulically fractured wells.

Prerequisites: PETE 324 and PETE 620.

PETE 649 Boundary Element Method for Geomechanics

Credits 3. 3 Lecture Hours.

Fundamental solutions of 2D and 3D boundary element methods; formulation of 2D and 3D direct, indirect, displacement discontinuity and dual boundary element methods; development of a 2-D boundary element computer program as a student project; applications of linear constitutive relation for hard rocks; applications of linear porous fluid flow problems for petroleum engineers; application of linear elasticity problems for fracture stability and fracture propagation problems.

Prerequisites: Computer language such as Fortran, C, C#, C++, Matlab.

PETE 650 Advanced Drilling Engineering

Credits 3. 3 Lecture Hours.

Underbalanced drilling techniques, offshore drilling; horizontal, extended reach and multilateral drilling and fishing operations; geothermal drilling and high pressure, high temperature drilling.

Prerequisite: Graduate classification; PETE 405 or equivalent basic drilling engineering.

PETE 651 Probabilistic Reserves Evaluation

Credits 3. 3 Lecture Hours.

Oil and gas reserves definitions and reporting regulations; probabilistic reserves estimation methods; unconventional resources characterization; reserves valuation techniques.

Prerequisites: Graduate classification or approval of instructor.

PETE 652 Deterministic Reserves Evaluation**Credits 3. 3 Lecture Hours.**

Oil and gas reserves definitions and reporting regulations; deterministic estimation methods; unconventional resources characterization; reserves valuation techniques.

Prerequisites: Graduate classification or approval of instructor.

PETE 653 Linear and Nonlinear Rock Mechanics**Credits 3. 3 Lecture Hours.**

Formulation of linear poro-elasticity equations; formulation of non-linear poro-elasticity and plasticity equations; formulation of various rock failure theories; solving linear and non-linear elasticity and plasticity equations using analytical methods; solving 2-D poro-elasticity and plasticity equations using a semi-analytical method; applying the solutions to drill string, casing, reservoir compaction, breakouts and sand production problems.

Prerequisites: Calculus and graduate classification.

PETE 655 Finite Element Method for Geomechanics**Credits 3. 3 Lecture Hours.**

Formulation of the 2D and 3D finite element method; development of a simple finite element computer program; linear and non-linear constitutive relation for soft and hard rocks; applications to porous flow and geomechanics problems; code the finite element computer programs and practice to solve geomechanics problems, reservoir flow, reservoir compaction, subsidence, borehole breakout and casing stability problems.

Prerequisites: Computer language such as Fortran, C, C#, C++, or Matlab.

PETE 656 Advanced Numerical Methods for Reservoir Simulation**Credits 3. 3 Lecture Hours.**

Numerical simulation of flow in porous media based on numerical methods for partial differential equations; supplemented by published papers and research topics; development of a reservoir simulator.

Prerequisites: Graduate classification; basic reservoir simulation or equivalent course; linear algebra and matrix computations or equivalent course; advanced calculus or equivalent course; programming experience.

PETE 657/CSCE 657 High Performance Computing for Earth Science and Petroleum Engineering**Credits 3. 3 Lecture Hours.**

Numerical simulation of problems in Earth Sciences and Petroleum Engineering using high performance computing (HPC); development of a parallel reservoir simulator.

Prerequisite: Graduate classification.

Cross Listing: CSCE 657/PETE 657.

PETE 658 Energy and Sustainability**Credits 3. 3 Lecture Hours.**

Overview of energy resources and use with emphasis on long-term sustainability; considers fossil, nuclear, and alternative energy sources, electricity and transportation, energy conversions, energy efficiency, energy security, energy policy, and environmental impact.

Prerequisite: Graduate classification.

PETE 659 Rock Mechanics Related to Hydraulic Fracturing**Credits 3. 3 Lecture Hours.**

Fundamentals of rock mechanics; calculation of displacements and stresses of opening fractures; evaluation of stress shadow effects; investigation of local stress reorientation and fracture interaction; analysis of near-tip stresses; determination of fracture propagation direction; summary of hydraulic fracturing treatments and modeling in unconventional reservoirs.

Prerequisite: Graduate classification.

PETE 660 Technical Writing and Presentations for Petroleum Engineers**Credits 3. 3 Lecture Hours.**

Planning, drafting and editing reports, proposals, correspondence, technical papers and procedures for workplace and academic applications; research and citation guidelines; working with templates; effective figures, graphs and tables; presentation design and practice.

PETE 661 Drilling Engineering**Credits 3. 3 Lecture Hours.**

Introduction to drilling systems: wellbore hydraulics; identification and solution of drilling problems; well cementing; drilling of directional and horizontal wells; wellbore surveying abnormal pore pressure, fracture gradients, well control; offshore drilling, underbalanced drilling.

PETE 662 Production Engineering**Credits 3. 3 Lecture Hours.**

Development of fundamental skills for the design and evaluation of well completions, monitoring and management of the producing well, selection and design of article lift methods, modeling and design of surface facilities.

PETE 663 Formation Evaluation and the Analysis of Reservoir Performance**Credits 3. 3 Lecture Hours.**

Current methodologies used in geological description/analysis, formation evaluation (the analysis/interpretation of well log data), and the analysis of well performance data (the design/analysis/interpretation of well test and production data); specifically, the assessment of field performance data and the optimization of hydrocarbon recovery by analysis/interpretation/integration of geologic, well log, and well performance data.

Prerequisite: Approval of instructor or graduate classification.

PETE 664 Petroleum Project Evaluation and Management**Credits 3. 3 Lecture Hours.**

Introduction to oil industry economics, including reserves estimation and classification-, building and using reservoir models, developing and using reservoir management processes, managing new and mature fields, and investment ranking and selections.

PETE 665 Petroleum Reservoir Engineering**Credits 3. 3 Lecture Hours.**

Reservoir description techniques using petrophysical and fluid properties; engineering methods to determine fluids in place, identify production-drive mechanisms, and forecast reservoir performance; implementation of pressure-maintenance schemes and secondary recovery.

Prerequisite: Approval of instructor or graduate classification.

PETE 667 Petroleum Engineering Reserves and Evaluation**Credits 3. 3 Lecture Hours.**

Estimation and valuation of hydrocarbon reserves and resources, with emphasis on probabilistic methods, technically challenging reservoirs, and unconventional resources.

Prerequisite: PETE 664, approval of instructor.

PETE 681 Seminar**Credit 1. 1 Lecture Hour.**

Study and presentation of papers on recent developments in petroleum technology.

PETE 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Training under the supervision of practicing professional engineers in settings appropriate to the student's professional objectives. May be taken four times for credit.

Prerequisite: Graduate classification and one semester of graduate work completed.

PETE 685 Directed Studies**Credits 1 to 12. 1 to 12 Other Hours.**

Students undertake and complete limited investigations not within their thesis research and not covered in established curricula.

Prerequisites: Graduate classification; approval of instructor.

PETE 689 Special Topics in...**Credits 1 to 4. 1 to 4 Other Hours.**

Special topics in an identified area of petroleum engineering. May be repeated for credit.

PETE 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Advanced work on some special problem within field of petroleum engineering. Thesis course.

PETE 692 Professional Study**Credits 1 to 12. 1 to 12 Other Hours.**

Approved professional study or project. May be taken more than once but not to exceed 6 hours of credit towards a degree.

PHAR - Pharmacy

PHAR 600 Dean's Hour**Credits 0. 0 Lecture Hours.**

The theme of the Dean's Hour is to involve students in the college's leadership and strategic initiatives and engage them in academic excellence. It allows them to provide input into programmatic issues. This course also provides an opportunity for students to participate in reflective thought and writing. Offered: Fall and spring semesters.

Prerequisite: Admission to Doctor of Pharmacy Program.

PHAR 601 Forum / Student Portfolios / Professional Development I**Credits 0-1. 0-1 Lecture Hours.**

In this two-semester course, students are exposed to leaders within the profession, practitioners from various settings, leading researchers and scientists, and other renowned individuals who discuss career opportunities, latest research results and the practice of pharmacy. Student portfolio assignments are due each semester. Offered: Fall and spring semesters.

Prerequisite: Admission to Doctor of Pharmacy Program.

PHAR 602 Core Recitation (P1)**Credits 0. 0 Lecture Hours.**

Core Recitation provides additional interaction for students with their teachers/facilitators in order to further their knowledge, skills and abilities. These sessions are dedicated to reviewing, in a different format, and clarifying material previously presented in a professional course. Most formative exams are scheduled during this course. Must be taken on a satisfactory/unsatisfactory basis. Offered: Fall and spring semesters.

Prerequisite: Admission to Doctor of Pharmacy Program.

PHAR 605 IPPE I: Introductory Pharmacy Practice Experiences**Credit 1. 1 Lecture Hour.**

Foundational concepts necessary to practice pharmaceutical care and develop the attitudes, values, skills and knowledge of a professional pharmacist; participation in simulated training, didactic lectures, service learning and reflection throughout the semester to implement didactic knowledge learned from the general academic curriculum; exposure to real patients and serves the needs of the community through organized activities under the supervision of health-care-practitioners; training includes basic patient assessment skills and communication skills to interact with patients at service learning events. Offered fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.

Corequisite: PHAR 672.

PHAR 606 IPPE II: Introductory Pharmacy Practice Experiences**Credit 1. 1 Lecture Hour.**

This course continues the IPPE course sequence dedicated to developing the attitudes, values, skills, and knowledge required to participate actively in the pharmacy profession. The student continues simulated training, didactic lectures, service learning, and reflection throughout the semester. Basic Medical Spanish and telephone prescription transcribing skills are taught and assessed. The student is expected to apply cumulative knowledge and skills from the didactic curriculum and is provided supervised opportunities to work with health-care practitioners. Offered: Spring semester.

Prerequisites: PHAR 605 IPPE I, PHAR 672 Intro to Patient Care.

Corequisites: PHAR 657 and PHAR 673.

PHAR 610 Principles Drug Action I**Credits 2. 2 Lecture Hours.**

The course provides an introduction to pathology, pathophysiology, pharmacology and medicinal chemistry. This course introduces the basic principles of drug action and covers chemical properties, stability, solubility, mechanisms of action and structure-activity relationships of the major drug classes. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.

Corequisite: PHAR 627.

PHAR 611 Principles Drug Action II**Credits 2. 2 Lecture Hours.**

The second of a two-class sequence. This course covers the pharmacology and medicinal chemistry of adrenergic and cholinergic agonists and antagonists, serotonergics and amino acid neurotransmitters. Offered: Spring semester.

Prerequisite: PHAR 610.

PHAR 626 Human Physiology**Credits 4. 4 Lecture Hours.**

This course provides core knowledge of human physiology and pathophysiology with elements of anatomy needed to understand: (1) normal function of the body systems, (2) common disease states, and (3) the role of pharmacologic agents in various physiologic disorders and pathological conditions. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.

PHAR 627 Biochemistry**Credits 3. 3 Lecture Hours.**

This course introduces the basic concepts in biochemistry with a focus on structure and function of carbohydrates, proteins, hormones, and lipids. It establishes the biochemical basis for cell structure, cellular metabolism, disease, drug function, and genetic information flow in prokaryotic and eukaryotic cells. Common metabolic pathways of drugs, enzyme induction, and metabolic regulation are presented. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**Corequisite:** PHAR 610.**PHAR 628 Research Methods/Biostatistics****Credits 2. 2 Lecture Hours.**

This course introduces statistical concepts, analytical methods and the fundamentals of research design and methodology. The primary goals are to familiarize students with experimental design, research terminology, statistical testing of data as well as ethical considerations of conducting research. Offered: Spring semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**Corequisite:** PHAR 658.**PHAR 641 Pharmaceutical Calculations****Credits 2. 2 Lecture Hours.**

This course requires the application of basic mathematics and quantitative reasoning to pharmaceutical calculations encountered by pharmacists in professional practice. Emphasis is given to dosage calculations, compounding and dispensing of formulations. Interpretation and filling of prescriptions are also discussed. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**PHAR 642 Pharmaceutics I****Credits 4. 3 Lecture Hours. 1 Lab Hour.**

The first of a two-course series introduces the principles of pharmaceutical dosage forms and discusses the effects of the physicochemical and biological properties of pharmaceutical products on the stability of drugs in dosage forms. The basic properties of radiopharmaceuticals and the role of nuclear pharmacy are also discussed. The laboratory portion of the course involves students in the preparation and evaluation of dosage forms. Offered: Spring semester.

Prerequisite: PHAR 641.**PHAR 656 Health Care Systems****Credits 2. 2 Lecture Hours.**

This course provides an introduction to the structure, organization, delivery, regulation and financing of health care. The history of pharmacy and the pharmacist's current role and responsibilities as a patient-centered health professional are covered. Interactions with other health occupations are also discussed. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**PHAR 657 Pharmacy Law and Ethics****Credits 3. 3 Lecture Hours.**

This course presents the application of ethical principles to pharmacy practice. Principles of ethical thinking and role of formal codes of professional conduct are discussed in the context of resolving conflicting ethical principles. Pharmacy law is covered as it relates to practice under federal, state and local regulations. Offered: Spring semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**Corequisite:** PHAR 606.**PHAR 658 Public Health and Pharmacoepidemiology****Credits 2. 2 Lecture Hours.**

Public Health and Pharmacoepidemiology. This course introduces principles of public health and application of epidemiologic methods to the study of drug use and outcomes in populations. Measures of effect size and confidence intervals in observational research designs are emphasized. Assignments are designed to develop skills in applying analytical concepts to literature evaluation and clinical decision making. Offered: Spring semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**PHAR 671 Clinical Communications****Credits 2. 2 Lecture Hours.**

This course introduces basic skills for effective healthcare communications. It provides verbal, non-verbal, and writing training, with patient counseling emphasis. Topics include negotiation, persuasion and presentation strategies to improve therapy adherence and clinical outcomes. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**PHAR 672 Introduction to Patient Care****Credits 2. 2 Lecture Hours.**

This course introduces the concepts of caring for patients and pharmaceutical care. Emphasis is placed on ways of collecting, organizing and evaluating information for the purpose of rendering decisions that improve patient quality of life through the SOAP format of therapy review and basic clinical skills including pharmaceutical care plans. Offered: Fall semester.

Prerequisite: Admission to Doctor of Pharmacy Program.**Corequisite:** PHAR 605.**PHAR 673 Self Care and Non-Prescription Medications****Credits 3. 3 Lecture Hours.**

This course introduces the principles of self-care and nonprescription medications, herbal products, and homeopathic. Emphasis is placed on the problem-solving processes involved in the therapeutic evaluation, rational use and recommendation for treatment. An emphasis is placed on patient care and patient counseling. Offered: Spring semester.

Prerequisites: PHAR 605, PHAR 610, PHAR 626 and PHAR 672.**Corequisite:** PHAR 606 IPPE-II.**PHAR 681 Seminar****Credit 1. 1 Lecture Hour.**

This course involves presentations in areas of current interest in pharmacy practice or in pharmaceutical sciences. The focus will be on promoting critical thinking skills. Emphasis will be placed on oral communications, scientific writing, and possibly grant preparation. Not graded, offered as an S/U option only. Offered: Fall, spring and summer semesters.

Prerequisite: Permission of instructor and department chair.**PHAR 685 Independent Study****Credits 1 to 3. 1 to 3 Lecture Hours.**

This course provides an opportunity for students to work with individual faculty mentors on research projects of variable scope. Activities could include library, laboratory and/or survey-type research, assistance with syllabus development for future elective courses, or other activities agreed on between the student and mentor. Not graded, offered as "S/U" option only. Can be repeated twice. Offered: Fall and spring semesters.

Prerequisite: Permission of instructor and department chair.

PHAR 689 Special Topics**Credits 1 to 3. 1 to 3 Lecture Hours.**

This course involves in-depth exploration of specialized topics within the college. Not graded, offered as S/U option only. Can be repeated twice, up to maximum number of hours permitted (an approved course). Offered: Fall, spring and summer semesters.

Prerequisite: Permission of instructor and department chair.

PHAR 691 Independent Research**Credits 1 to 9. 1 to 9 Other Hours.**

This course involves research for thesis or dissertation. Not graded, offered as S/U option only. Can be repeated (an approved course). Offered: Fall, spring and summer semesters.

Prerequisite: Permission of supervisory professor in chosen field and department chair.

PHAR 700 Dean's Hour**Credits 0. 0 Lecture Hours.**

The theme of the Dean's Hour is to involve students in the college's leadership and strategic initiatives and engage them in academic excellence. It allows them to provide input into programmatic issues. This course also provides an opportunity for students to participate in reflective thought and writing. Offered: Fall and spring semesters.

Prerequisite: P2 standing.

PHAR 701 Forum/Student Portfolios/Professional Development II**Credits 0-1. 0-1 Lecture Hours.**

In this two-semester course, students are exposed to leaders within the profession, practitioners from various settings, leading researchers and scientists, and other renowned individuals who discuss career opportunities, latest research results and the practice of pharmacy. Student portfolio assignments are due each semester. Offered: Fall and spring semesters.

Prerequisite: P2 standing.

PHAR 702 Core Recitation (P2)**Credits 0. 0 Lecture Hours.**

Core Recitation provides additional interaction for students with their teachers/facilitators in order to further their knowledge, skills and abilities. These sessions are dedicated to reviewing, in a different format, and clarifying material previously presented in a core course. Most formative exams are scheduled during this course. Offered: Fall and spring semesters.

Prerequisite: P2 standing.

PHAR 705 IPPE: Community Pharmacy Practice**Credit 1. 1 Other Hour.**

This course continues the IPPE sequence and is a structured introductory pharmacy practice experience in the community pharmacy under the supervision of a licensed pharmacist preceptor. Through 12 weekly longitudinal site visits, the student provides direct patient care and reflects upon the professional activities. The student gains introductory competence in the values, attitudes, knowledge and skills of a pharmacist in the community setting. Offered: Fall and spring semesters.

Prerequisites: PHAR 606, HIPAA training; blood-borne pathogens training; Basic Life Support certification; and a valid Pharmacists Intern License from the Texas State Board of Pharmacy throughout the course.

PHAR 706 IPPE: Institutional Pharmacy Practice**Credit 1. 1 Lecture Hour.**

This course continues the IPPE sequence and is a structured introductory pharmacy practice experience in the institutional (or hospital) pharmacy under the supervision of a licensed pharmacist preceptor. Through 12-weekly longitudinal site visits, the student provides direct patient care and reflects upon the professional activities. The student gains introductory competence in the values, attitudes, knowledge and skills of a pharmacist in the institutional setting. Offered: Fall and spring semesters.

Prerequisites: PHAR 606, HIPAA training, blood-borne pathogens training; Basic Life Support certification; and a valid Pharmacist Intern License from the Texas State Board of Pharmacy throughout the course.

PHAR 710 IPT I: Electrolytes, Acid-Base, and Kidney Diseases**Credits 2. 2 Lecture Hours.**

This course presents common renal disorders with an emphasis on the management of electrolyte, fluid, acid-base, acute and chronic renal disease, and common anemic conditions. Offered: Fall semester.

Prerequisite: P2 standing.

Corequisites: PHAR 711, PHAR 714.

PHAR 711 IPT II: Cardiovascular Diseases**Credits 4. 4 Lecture Hours.**

This course presents common cardiovascular disorders with a major emphasis on hypertension, ischemic heart disease, arrhythmias, heart failure, venous thromboembolism, dyslipidemia, stroke and peripheral arterial disease. Offered: Fall semester.

Prerequisite: P2 standing.

Corequisites: PHAR 710, PHAR 714.

PHAR 712 IPT III: Endocrinology and Metabolic Diseases**Credits 3. 3 Lecture Hours.**

IPT III: Endocrinology and Metabolic Diseases. This course presents common endocrine and metabolic disorders with an emphasis on diabetes, contraception, infertility, corticosteroids, thyroid, osteoporosis and menopause. Offered: Spring semester.

Prerequisites: PHAR 710, PHAR 711, PHAR 714.

Corequisites: PHAR 713 and PHAR 715.

PHAR 713 IPT IV: Neurology and Pain Management**Credits 3. 3 Lecture Hours.**

This course presents neurological disorders and pain with emphasis on seizure disorders, pain management, Parkinson's and Alzheimer's diseases, migraine headaches, muscle relaxants, neuromuscular blocking agents and anesthetics. Offered: Spring semester.

Prerequisites: PHAR 710 and PHAR 711.

Corequisites: PHAR 712, PHAR 715.

PHAR 714 IPT Recitation/Rounds I**Credit 1. 1 Lab Hour.**

This course introduces problem-based learning to develop skill sets for use in critical analysis and assessment of therapeutics cases using the SOAP process. Individual and team activities will focus on obtaining pertinent information, locating and utilizing appropriate resources, and integrating evidence-based practice into therapeutic decisions. Offered: Fall semester.

Prerequisite: P2 Standing.

Corequisites: PHAR 710 and PHAR 711.

PHAR 715 IPT Recitation/Rounds II**Credit 1. 1 Lab Hour.**

This course builds on prior skills while introducing the patient care plan process. Individual and team activities will build on previous courses with additional focus on written and verbal communication ability-based outcomes and critical evaluation and use of clinical resources. Offered: Spring semester.

Prerequisites: PHAR 710, PHAR 711, PHAR 714.**Corequisites:** PHAR 712 and PHAR 713.**PHAR 720 Introduction to Academic Pharmacy****Credits 2. 2 Lecture Hours.**

This elective course is an overview of academic pharmacy, its role in higher education, and the triumvirate faculty roles in teaching, research, and service. During this course, the focus is on teaching in academic pharmacy and the value of teacher's self-knowledge. Various career paths in academic pharmacy are presented. Elective course. Offered: Fall semester.

Prerequisite: P2 Standing.**PHAR 721 Nutrition, Vitamins, Complementary and Alternative Medicine**
Credits 2. 2 Lecture Hours.

This course provides an overview of the basic nutrients required by the body for optimal health. The student is introduced to methods of determining a patient's nutritional status and oral, enteral and parenteral nutritional requirements. Topics include the major nutrients of carbohydrates, lipids, protein, vitamins and minerals. The course will also provide an evidence-based approach to complementary and alternative medicine. Offered: Fall semester.

Prerequisite: P2 standing.**PHAR 725 Applied Pain Pharmacotherapy****Credits 2. 2 Lecture Hours.**

This elective course focuses on pharmacotherapy of chronic pain states. The emphasis is on practical aspects of pain management such as effective and safe analgesic dose rotation and conversion, tailoring and individualizing therapy with analgesics, management of adverse events, documentation, and patient counseling. Problem-solving is based on various pain case studies. Elective course. Offered: Spring semester.

Prerequisite: IPT IV.**PHAR 726 Microbiology/Immunology****Credits 3. 3 Lecture Hours.**

This course provides an overview of medical microbiology with the immunological responses and the host-parasite interaction in infectious diseases. It integrates the basic concepts of the immune response to infectious agents and other triggers and their roles in disease. An introduction to the rational management, prevention, and control of infectious diseases is provided. Offered: Spring semester.

Prerequisite: P2 standing.**PHAR 727 Obesity Epidemic****Credits 2. 2 Lecture Hours.**

This elective course covers the various aspects of the obesity epidemic in the United States. The main focus is on the physiological and pathophysiological aspects of obesity. The complications of, prevalence, and incidence data from national health statistics regarding, and interventions for obesity are emphasized. Offered: Spring semester.

Prerequisite: PHAR 712 (or concurrent enrollment).**PHAR 730 Vitamins, Phytomedicinals and Other Natural Products****Credits 2. 2 Lecture Hours.**

This course intends to explore vitamins, phytomedicinals, and other natural products, especially those used as nutritive supplements and homeopathic remedies, from a medicinal and chemical perspective. Particular emphasis will be placed on the chemical nature of these agents with regards to structure, physiochemical properties, structure-activity relationships, mechanism of action, drug-drug interactions, metabolism, and excretion. The course will look at these commonly used agents from a "medicinal chemistry" perspective. Offered: Fall semester.

Prerequisite: P3 standing.**PHAR 734 Applied Drug Metabolism in Pharmacotherapy****Credits 2. 2 Lecture Hours.**

Ongoing discoveries in pharmacogenetics field are expanding drug metabolism in directions that lead to the future prospect of truly individualized drug regimens. The principles presented in this elective course will help to keep abreast of these new developments and applications in pharmacotherapy. This course will focus on fundamentals of drug metabolism, metabolic pathways, different CYP isoforms involved and their role in drug metabolism. General drug metabolic pathways (e.g. oxidation, reduction, conjugation), the induction and inhibition of CYP450 enzymes and their role in drug toxicity, drug-drug interactions, drug-food interactions, idiosyncratic reactions, and chemical carcinogenesis will also be discussed.

Prerequisite: PHAR 611.**PHAR 741 Pharmaceutics II****Credits 3. 3 Lecture Hours.**

The second of a two-course series introduces students to the principles of biopharmaceutics and provides information on the theory, technology, formulation, evaluation, and dispensing of solid dosage forms and sterile products. The course additionally covers principles of controlled, targeted and self-regulated drug delivery systems. Fundamentals of cellular absorption of macromolecules and novel approaches for protein and gene delivery are also discussed. Offered: Fall semester.

Prerequisite: P2 standing.**Corequisite:** PHAR 742.**PHAR 742 Basic Pharmacokinetics****Credits 3. 3 Lecture Hours.**

This course covers the measurement and interpretation of drug concentrations in biological fluids with a focus on the relationship between drug dose and effect. Students calculate and interpret pharmacokinetic parameters, discuss pharmacokinetic principles, and assess factors that affect drug disposition. Offered: Fall semester.

Prerequisite: P2 standing.**Corequisite:** PHAR 741.**PHAR 745 Licit and Illicit Drug Use, Abuse and Addiction****Credits 3. 3 Lecture Hours.**

In this elective course, students will examine the use and abuse of licit and illicit drugs in our society from historical, biological, psychological and sociological perspectives. Drugs that will be covered in the class include cocaine, amphetamines, opiates, hallucinogens, marijuana, performance-enhancing drugs, prescription drugs, over-the-counter drugs, dietary supplements, alcohol, nicotine and inhalants. Students will become familiar with the topic of drug use and abuse through listening to didactic lectures, participating in small group discussions, writing opinion papers and organizing a community project. Offered: Spring semester.

Prerequisite: PHAR 626.

PHAR 750 Drugs in Practice I**Credit 1. 1 Lecture Hour.**

This two-part elective builds upon pharmacotherapy information presented in the IPT Sequence and on the counseling skills developed in Clinical Communications. It specifically focuses on the most commonly used and recently approved drug products. Students will create their own study materials by therapeutic class, and on an alternating basis present material to their classmates. There will be a heavy emphasis on active, participatory and self-learning. Student will be responsible for mastering information on the warnings, contraindications, monitoring parameters, interactions, adverse reactions and patient information for the therapeutics categories covered. Students will also counsel a patient at the proper literacy level receiving a mock prescription for the products presented. Offered: Spring semester.

Prerequisite: P3 standing.

PHAR 753 Clinically Significant Drug Interactions**Credits 2. 2 Lecture Hours.**

This elective course will cover clinically significant drug interactions of commonly prescribed medications. Most drug interaction software programs tend to "flag" all interactions, which makes it difficult for the pharmacist to understand the clinically significant interactions and make a recommendation. This course will provide methods for recognizing and acting upon significant drug interactions. Appropriate consultation techniques for making recommendations to providers and patients on clinically significant drug interactions will be taught. Offered: Spring semester.

Prerequisites: PHAR 610 and PHAR 611.

PHAR 757 Pharmacy Management and Pharmacoeconomics**Credits 3. 3 Lecture Hours.**

Introduction to leadership and management activities within the health care system; analyzing problems involving time, equipment, funding, and human resources in a health care environment; emphasis on the role of the leader and developing problem solving abilities within a framework of pharmacy management; four pharmacoeconomic models, decision analysis methods, and measuring humanistic, clinical, and economic outcomes; emphasis is placed on skills to evaluate pharmacoeconomic literature.

Prerequisite: P2 standing.

PHAR 758 Forensic Pharmacy**Credits 2. 2 Lecture Hours.**

This elective course introduces students to the field of forensic pharmacy which studies the interaction between law and medicinal science. It applies principles of both areas to legislation, litigation, agency regulation, and many aspects of the criminal justice system. Students may focus on such topics as: prescription forgery, pharmacologic euthanasia, testing for drugs of abuse, professional malpractice, drug impaired driving, drug induced violence, product tampering, health care fraud, patient confidentiality, patient consent, chemical restraints, drug effects as a mitigating factor in criminal sentencing, expert witnessing, or another forensic pharmacy subject agreed to by the instructor. Offered: Fall and spring semesters.

Prerequisite: PHAR 657.

PHAR 759 Health Informatics And Patient-Centered Care**Credits 2. 2 Lecture Hours.**

This elective course introduces students to information technology in health care, with emphasis on the Electronic Health Record and Electronic Prescribing. The course focuses on students who will eventually become the end-user of the Electronic Health Record: practicing pharmacists in a clinical health care setting. The method of instruction includes practical applications and hands-on exercises to provide a complete learning system. The topics integrate the history, theory and benefits of information technology with the opportunity for students to enhance clinical skills in the electronic health record environment. Offered: Fall and spring semesters.

PHAR 761 Humanism in Pharmacy Practice**Credits 2. 2 Lecture Hours.**

Exploration of the fundamental principles of humanistic practice such as open communication, mutual respect, and absence of judgment between patients and health care providers; embracing and addressing patients' experience of health and illness and providing specialized technical functions of each profession; current literature, patient cases, speakers, personal reflection and group exercises to empower pharmacy students to provide and advocate for humanistic healthcare.

Prerequisite: P2 or P3 standing.

PHAR 763 Geriatric Care**Credits 2. 2 Lecture Hours.**

Fundamentals of geriatric pharmacy with focus on anticoagulation, primary care diseases, neurologic disorders, cardiovascular disorders, neurologic disorders, infectious diseases, polypharmacy and inappropriate prescribing, drug interaction, community pharmacy, consultant pharmacy and Texas State Board of Pharmacy Rules and Regulations in geriatric care.

Prerequisite: P2 or P3 standing.

PHAR 764 Utah School on Alcoholism**Credits 2. 2 Lecture Hours.**

Development of product knowledge, critical thinking skills, and patient care abilities with the principles and theories of addiction; offered by the University of Utah School on Alcoholism and other Drug Dependencies; additional information regarding the school and program of events may be found at medicine.utah.edu/uas/index.html.

Prerequisite: P2 or P3 standing.

PHAR 765 Pediatric Pharmacotherapy**Credits 2. 2 Lecture Hours.**

Instruction in pediatric pharmacotherapy through a combination of lectures, brief student presentations and online cases; work groups make a 20-minute presentation on a pediatric topic; work groups to complete on-line case assignment and journal article reviews.

Prerequisite: P2 or P3 standing.

PHAR 766 Landmark Studies**Credits 2. 2 Lecture Hours.**

Focus on important clinical trials that shape the use of pharmacotherapy; assist students in their ability to provide clinical evidence to support drug therapy recommendations in the treatment of common diseases encountered during their clinical rotations and future practice. May be repeated for credit.

Prerequisite: P2 or P3 standing.

PHAR 767 Patient Monitoring**Credits 2. 2 Lecture Hours.**

Overview of laboratory testing and other diagnostic procedures such as imaging, body fluid analysis, centesis and fiberoptic visualization; topics include cardiology, hematology, blood chemistry, liver tests/biopsy, body fluid tests, radiography, Computed Tomography (CT) scans, Magnetic Resonance Imaging (MRI), gastrointestinal tests, arterial blood gases, pulmonary function tests, ultrasonography, cardiac catheterization, cardiac stress testing and echocardiography.

Prerequisite: P2 or P3 standing.**PHAR 771 Spanish for Pharmacists****Credits 2. 2 Lecture Hours.**

The focus of this elective course will be to provide students with a basic Spanish foundation for communicating with pharmacy clients. Emphasis will be on medical/pharmacy terminology and the ability to give instructions regarding the purpose and use of medications. Offered: Fall and spring semesters.

Prerequisite: P3 standing.**PHAR 773 Women's Health****Credits 2. 2 Lecture Hours.**

This elective course will highlight the special medical needs and health issues that females face. The course will include a review of female anatomy and physiology. Common diseases and disorders, along with preventive and management strategies, will be covered. Psychological, social, and economic aspects of women's health will also be addressed. The course will follow the physiological and neurological aging processes in woman. Conception and psychosocial issues are two of the topics that will be covered in depth.

Prerequisite: P2 standing.**PHAR 777 Sterile Products/IV Admixtures (Lab)****Credit 1. 1 Lab Hour.**

This laboratory course introduces the standards for preparation of parenteral products and provides an opportunity for students to gain proficiency with calculating and compounding sterile formulations. It focuses on proper aseptic technique, preparation of intravenous admixtures, safe handling of cytotoxic and hazardous drugs, quality assurance, and labeling. Offered: Fall semester.

Prerequisite: P2 standing.**PHAR 778 Drug Literature Evaluation and Patient Drug Education****Credits 3. 2 Lecture Hours. 1 Lab Hour.**

This course introduces students to drug information resources and the retrieval of and critical evaluation of drug literature related to providing pharmaceutical care. Principles and methods of drug education are presented and discussed with emphasis on development of informational materials and educational programs. Offered: Spring semester.

Prerequisite: P2 standing.**PHAR 779 Advanced Diabetes Care and Management****Credits 2. 2 Lecture Hours.**

The purpose of this elective course is to provide the student with a multidisciplinary foundation in the principles of diabetes management. The student will develop their knowledge and ability to assess, manage, educate and monitor patients with diabetes.

Prerequisites: PHAR 712 and PHAR 776.**PHAR 781 Seminar****Credits 0-1. 0-1 Lecture Hours.**

This course involves presentations in areas of current interest in pharmacy practice or in pharmaceutical sciences. The focus will be on promoting critical thinking skills. Emphasis will be placed on oral communications, scientific writing and possibly grant preparation. Grades, offered as a graded option only. Can be repeated twice up to maximum number of hours permitted. Offered: Fall and spring semesters.

Prerequisite: Permission of instructor and department chair.**PHAR 785 Independent Study****Credits 1 to 3. 1 to 3 Other Hours.**

This course provides an opportunity for students to work with individual faculty mentors on research projects of variable scope. Activities could include library, laboratory and /or survey-type research, assistance with syllabus development for future elective courses, or other activities agreed on between the student and mentor. Grades, offered as a grade option only. Can be repeated twice up to a maximum number of hours permitted. Offered: Fall, spring and summer semesters.

Prerequisite: Permission of instructor and department chair.**PHAR 789 Special Topics****Credits 1 to 3. 1 to 3 Other Hours.**

This course involves in-depth exploration of specialized topics within the college. Graded, offered as a graded option only. Can be repeated twice, up to maximum number of hours permitted. Offered: Fall, spring and summer semesters.

Prerequisites: Permission of instructor and department chair; instructors who wish to offer this course will submit an outline of the content to be covered and how the students will be assessed to the Office of Academic Affairs before registration begins.**PHAR 800 Dean's Hour****Credits 0. 0 Lecture Hours.**

Dean's Hour. The theme of the Dean's Hour is to involve students in the college's leadership and strategic initiatives and engage them in academic excellence. It allows them to provide input into programmatic issues. This course also provides an opportunity for students to participate in reflective thought and writing. Offered: Fall and spring semesters.

Prerequisite: Admission to Doctor of Pharmacy Program.**PHAR 801 Forum/Student Portfolios/Professional Development III****Credits 0-1. 0-1 Lecture Hours.**

In this two-semester course students are exposed to leaders within the profession, practitioners from various settings, leading researchers and scientists, and other renowned individuals who discuss career opportunities, latest research results and the practice of pharmacy. Student portfolio assignments are due each semester. Offered: Fall and spring semesters.

Prerequisites: P3 standing, HIPAA training, blood-borne pathogens training.**PHAR 802 Core Recitation (P3)****Credits 0. 0 Lecture Hours.**

Core Recitation provides additional interaction for students with their teachers/facilitators in order to further their knowledge, skills and abilities. These sessions are dedicated to reviewing, in a different format, and clarifying material previously presented in a core course. Most formative exams are scheduled during this course. Offered: Fall and spring semesters.

Prerequisite: P3 standing.

PHAR 804 Grand Rounds I Capstone**Credit 1. 1 Lecture Hour.**

Grand Rounds I Capstone. This course is held during the P4 year while the PharmD Candidates are participating in the Advanced Pharmacy Practice Experiences (APPEs). It is designed to provide opportunities for didactic course content review that will assist students in their transition into the profession of Pharmacy. The course will primarily be on-line, case based review of topics. Cases are designed to provide assessment of the student's knowledge base on a variety of disease states and patient populations. Grading will be on satisfactory/unsatisfactory basis. Offered: Fall semester.

Prerequisite: P4 standing.

Corequisite: Currently enrolled in APPEs.

PHAR 805 Capstone**Credit 1. 1 Lecture Hour.**

This course is designed to provide students with the opportunity to reflect on the progress of their skills and knowledge, prepare and plan for post-graduate opportunities such as residencies and graduate school, and to provide time to review material the student feels strengthens his/her weaknesses. There will be a pharmacy law refresher offered as part of the course. Students will complete mock licensure exams, continuing education programs and other review activities. Grading will be on a satisfactory/unsatisfactory basis. Offered: P4 year.

Prerequisite: P4 standing.

PHAR 810 IPT V: Psychiatry and Addiction**Credits 3. 3 Lecture Hours.**

This course presents common psychiatric disorders with major emphasis on the treatment of addiction, depression, anxiety, insomnia, psychosis, schizophrenia, bipolar disorder, eating disorders, attention deficit hyperactive disorder. Offered: Fall semester.

Prerequisite: P3 standing.

Corequisites: PHAR 811 and PHAR 814.

PHAR 811 IPT VI: Critical Care, GI, Pulmonary, Rheumatic, Ophthalmology and Dermatology**Credits 5. 5 Lecture Hours.**

IPT VI: Critical Care, GI, Pulmonary, Rheumatic, Ophthalmology, and Dermatology. This course presents common GI conditions, rheumatologic disorders and pulmonary disease with major emphasis on peptic ulcer disease, GERD, irritable bowel disease, nausea, vomiting, diarrhea, benign prostatic hypertrophy, erectile dysfunction, incontinence, arthritis, gout, SLE, asthma, COPD and allergic rhinitis. Offered: Fall semester.

Prerequisite: P3 standing.

Corequisites: PHAR 810 and PHAR 814.

PHAR 812 IPT VII: Infectious Diseases**Credits 5. 5 Lecture Hours.**

This course presents antimicrobial agents used to treat common infectious diseases with major emphasis on organ-specific bacterial, fungal, and viral infections as well as surgical prophylaxis, sexually-transmitted diseases, HIV disease and opportunistic infections. A focal point is correlating medical microbiology with the medications used to treat specific organisms as well as current trends in emerging antimicrobial resistance. Offered: Spring semester.

Prerequisites: PHAR 810, PHAR 811 and PHAR 814.

Corequisites: PHAR 813, PHAR 815 and PHAR 875.

PHAR 813 IPT VIII: Oncology, Transplant and Genomics**Credits 3. 3 Lecture Hours.**

IPT VIII: Oncology, Transplant, and Genomics. This course presents common neoplastic diseases, organ transplantation, and pharmacogenomics with an emphasis on most common carcinomas, sarcomas and lymphomas, supportive and palliative care, solid organ transplants. Offered: Spring semester.

Prerequisites: PHAR 810, PHAR 811 and PHAR 814.

Corequisites: PHAR 812, PHAR 815 and PHAR 875.

PHAR 814 IPT Recitation/Rounds III**Credit 1. 1 Lab Hour.**

This course is designed for continued application of SOAP and patient care plan processes to critically analyze and solve increasingly complex patient problems. Individual and team activities will build on previous sequence courses with additional focus on effective written and verbal communication of literature critique and presentation. Offered: Fall semester.

Prerequisite: P3 standing.

Corequisites: PHAR 810 and PHAR 811.

PHAR 815 IPT Recitation/Rounds IV**Credit 1. 1 Lab Hour.**

The fourth of a four-class sequence builds on the course description of the IPT Recitation/Pharmacy Rounds Sequence (see under P2 course listings). Specifically, it covers the principle therapies associated with infectious diseases, oncology, supportive care and organ transplantation. Patient education regarding the issues surrounding their conditions and drug therapy are also identified and addressed. Students are responsible for participation in drug use decisions and devising rational pharmacy care plans (therapeutic strategies) and optimal drug dosage regimens, as well as determining appropriate parameters for outcome monitoring and assessment techniques for safety and efficacy.

Prerequisites: PHAR 814 IPT Recitation/Rounds III, PHAR 810 IPTV: Psychiatry & Addiction; PHAR 811 IPT VI: GI, Pulmonary, Rheumatic, Ophthalmology, Dermatology, & Vitamins.

Corequisites: PHAR 812 IPT VII, PHAR 813 IPT VIII. Offered: Spring semester.

PHAR 820 APPE: Elective I**Credits 6. 40 Other Hours.**

Opportunities to build on knowledge and skills acquired through didactic education and introductory pharmacy practice experiences and apply them in direct patient care activities in various pharmacy settings; participation in various activities that enhance the pharmacy profession and development as professional pharmacists; opportunities may include a topic area pertinent to pharmacy practice as approved by the College.

Prerequisite: Fourth year Pharmacy classification.

PHAR 821 APPE: Elective II**Credits 6. 40 Other Hours.**

Opportunities to build on knowledge and skills acquired through didactic education and introductory pharmacy practice experiences and apply them in direct patient care activities in various pharmacy settings; participation in various activities that enhance the pharmacy profession and development as professional pharmacists; opportunities may include a topic area pertinent to pharmacy practice as approved by the College; second course of two APPE required electives.

Prerequisite: Fourth year Pharmacy classification.

PHAR 822 APPE: Elective III**Credits 6. 40 Other Hours.**

Opportunities for students to build on knowledge and skills acquired through didactic education and introductory pharmacy practice experiences and apply them in direct patient care activities in various pharmacy settings; participation in various activities that enhance the pharmacy profession and development as professional pharmacists; opportunities may include a topic area pertinent to pharmacy practice as approved by the College optional APPE elective.

Prerequisite: Fourth year Pharmacy classification.

PHAR 826 APPE: Research**Credits 6. 6 Other Hours.**

Observation and participation in the research pharmacist's role; emphasis on how to conduct experiments, analyze data and discuss results; continue to build knowledge base in the discipline of the preceptor and gain practical experience in research; review journal articles and write a synopsis to further develop medical writing skills and orally present journal articles.

Prerequisite: P4 classification.

PHAR 828 APPE: Spinal Cord Injuries**Credits 6. 6 Other Hours.**

Centers around an interdisciplinary team that collects patient specific information to prevent, detect and resolve medication related problems and to make appropriate evidence-based patient centered medication therapy recommendation; development of SCI pharmacotherapeutic regimens and monitoring plans.

PHAR 829 APPE: Pharmacoeconomics**Credits 6. 6 Other Hours.**

Factors in formulary management and decision making including drug characteristics, drug administration and monitoring costs, quality of life, total costs, cost effectiveness, supply related issues and practice demand.

Prerequisite: Enrollment in the Doctor of Pharmacy.

PHAR 830 APPE: Medication Therapy Management**Credits 6. 6 Other Hours.**

Optimization of therapeutic outcomes for patients through medication reconciliation on discharge medications and the provision of discharge counseling to medicine patients.

PHAR 841 Toxicology and Poison Management**Credits 2. 2 Lecture Hours.**

This course provides an overview of basic concepts in clinical toxicology including diagnosis and treatment of common poisonings with emphasis on patient-oriented toxicology. Current poison information systems and their clinical uses are provided. Focal points will include critical problem-solving skills, patient interview techniques, differential diagnosis of poisoning, rational therapeutic plans for toxicological problems, and patient monitoring parameters. Offered: Fall semester.

Prerequisite: P3 standing.

PHAR 842 Patient Assessment**Credits 3. 2 Lecture Hours. 1 Lab Hour.**

This course is designed to develop skills in data collection, interpretation and evaluation of a patient's physical state. Physical examination principles are presented on select organ systems and are followed by practicums whereby students practice learned techniques. Additional skills in patient interviewing, SOAP note documentation, medication profiling and advisement are also covered. Offered: Fall semester.

Prerequisite: P3 standing.

PHAR 855 APPE: Pain Management**Credits 6. 6 Other Hours.**

Introduction to treating patients for pain management in the hospital setting; focus on medication management of patients on pain medications; use of problem solving skills to gain experience with therapeutic monitoring, drug-related problems, and medication side effects.

Prerequisite: P4 classification.

PHAR 856 Introduction to Pharmacoeconomics**Credits 2. 2 Lecture Hours.**

This course introduces the concepts of health outcomes research and pharmacoeconomic analysis and provides a basic framework to optimize health care resource allocation. Principles of measuring and analyzing costs and outcomes plus techniques used to evaluate them across drug treatments are discussed. The course reviews practice guidelines for pharmacoeconomic evaluation and describes conducting pharmacoeconomic research. Offered: Spring semester.

Prerequisite: PHAR 756 and PHAR 778.

PHAR 857 APPE: Nutrition**Credits 6. 6 Other Hours.**

Gain professional skills in the area of nutrition/nutrition support; participation in a variety of clinical activities, functioning as an integral member of the health care team; emphasis on building knowledge and experience with enteral and parenteral nutrition and the ability to demonstrate understanding of common disease states and treatment modalities as well as ability to provide pharmaceutical care; most commonly encountered medical conditions may include malnutrition syndromes, malabsorptive syndromes (short gut, inflammatory bowel disease, etc.), high metabolic need states (burns, critical care, etc.), and conditions requiring specialized feeding devices.

Prerequisite: P4 classification.

PHAR 858 APPE: Poison Control**Credits 6. 6 Other Hours.**

Work closely with the pharmacist and professional staff of a poison control center and possibly other pharmacy students, emergency medicine residents, and toxicology fellows; spend time with the professional staff on the phones handling patient and professional inquiries; emphasizes on becoming familiar with the role of a pharmacist in a poison control center, identifying various information resources used by poison center staff and ability to relay poison information to the lay public, emergency room staff and other health care professionals.

Prerequisite: P4 classification.

PHAR 859 APPE: Surgery**Credits 6. 6 Other Hours.**

Introduction to clinical pharmacy practice in the outpatient surgery setting; designed to develop further the knowledge and understanding of the processes, procedures and skills necessary to provide pharmaceutical care to surgery patients.

Prerequisite: P4 classification.

PHAR 860 APPE: Veterinary Medicine**Credits 6. 6 Other Hours.**

Introduction to veterinary pharmacology and therapeutics and the role of the pharmacist in the care of animals; evaluation of the most commonly used drugs in veterinary care and relation to the use of these drugs in humans; fundamental concepts to provide pharmaceutical care to animals and assist the veterinarian and owner in the care of pets and domestic animals; emphasis on the selection of the proper therapeutic agents for use in various species of animals.

Prerequisite: P4 classification.

PHAR 862 APPE: Compounding**Credits 6. 6 Other Hours.**

Introduction to extemporaneous pharmaceutical compounding within the community setting; further development of knowledge and understanding of the techniques, processes, procedures and skills necessary to provide pharmaceutical care for patients needing compounded products; compound prescriptions not commercially available or economically feasible to manufacture in order to meet individual patient needs; most commonly compounded preparations may include oral liquids (solutions, suspension, etc.) capsules, suppositories, lozenges, nasal sprays and topical preparations (gels, creams and ointments).

Prerequisite: P4 classification.

PHAR 863 APPE: Home Infusion**Credits 6. 6 Other Hours.**

Introduction to clinical pharmacy practice in the home infusion setting; further development of knowledge and understanding of the processes, procedures and skills necessary to provide pharmaceutical care for home infusion patients; general and clinical operations, identification and training of appropriate candidates to receive infusion therapy and the initial assessment and ongoing care planning for patients receiving infusions; development of skills necessary to prepare products for home infusion therapy.

Prerequisite: P4 classification.

PHAR 864 APPE: Investigational Drugs**Credits 6. 6 Other Hours.**

Introduction to key concepts of Investigational Review Boards (IRB) and the role of the pharmacist in the use of investigational drugs; unique procedures of dispensing of investigational medications, drug accountability, study monitoring and reviewing drug orders; opportunity to attend an IRB meeting and work with clinical investigators who have ongoing research; preparation for work in an investigational drug service and an inside view of pharmaceutical research requirements.

Prerequisite: P4 classification.

PHAR 865 APPE: Nuclear Pharmacy**Credits 6. 6 Other Hours.**

Advanced practice in a supervised, clinical experience in nuclear pharmacy and participation in patient management as a member of the nuclear medicine team; emphasis on regulatory matters, technology, distribution procedures and the specialized skills utilized in a nuclear pharmacy; active involvement in the distributive functions of compounding and dispensing radiopharmaceuticals, as well as the associated patient-oriented functions and consultative interactions with nuclear medicine personnel.

Prerequisite: P4 classification.

PHAR 866 APPE: Managed Care**Credits 6. 6 Other Hours.**

Introduction to clinical pharmacy practice in the managed care setting; designed to develop further the knowledge and understanding of the pharmacist's role in formulary development and management, as a means of cost control and literature evaluation as it pertains to clinical decision making in specific patient cases; may be responsible for therapeutic class reviews, communication with patients, providers, and employer groups, evaluation, counseling and participation in the prior authorization process; development of skills necessary to be involved in Medication Therapy Management, using primary literature and cost-benefit analysis.

Prerequisite: P4 classification.

PHAR 867 APPE: Professional Association Management**Credits 6. 6 Other Hours.**

Introduction to pharmacy association management at the national, regional or state level; designed to develop further the knowledge and understanding of the purpose, roles and responsibilities of pharmacy associations in the profession; responsible for recruitment and retention initiatives of members and developing and designing programs which appeal to both the newly graduated and the highly experienced; development of necessary to interact effectively in a business setting and evaluate legislation to determine possible implications to the profession.

Prerequisite: P4 classification.

PHAR 868 APPE: Regulatory Affairs**Credits 6. 6 Other Hours.**

Introduction to the legal and regulatory processes that impact the profession; opportunities will vary according to the preceptor and site availability; delve into the enactment and enforcement of federal and state laws related to drug manufacture, drug distribution, drug use and pharmacy practice; includes working with federal or state agencies, regulatory or accrediting bodies, legal scholars, or others.

Prerequisite: P4 classification.

PHAR 869 APPE: Health Informatics**Credits 6. 6 Other Hours.**

Focus on the areas of health informatics and its impact on practice; basic understanding of the history, language and concepts of information technology thereby exposing to the interdisciplinary environment of informatics project teams; database management, automation and robotics, electronic prescribing, and health records; location of the rotation will vary according to preceptor and site availability; emphasis on information searches, analysis and the development and dissemination of reports; become more familiar with HIPPA requirements and information security measures.

Prerequisite: P4 classification.

PHAR 870 APPE: Administration**Credits 6. 6 Other Hours.**

Introduction to the administrative role pharmacists perform in different practice settings; opportunities will vary according to preceptor and site availability; rotation assignments may be made in community pharmacy or health-system pharmacy management, academic leadership, or other sites that feature a prominent administrative presence; continue to build knowledge base in the administrative, behavioral, economic and legal sciences; exploration of the role a manager plays in directing the organizational, financial and human relations aspect of the site; activities include reviewing pertinent literature, participation in management discussions, writing reports and working on assigned projects.

Prerequisite: P4 classification.

PHAR 871 Pharmaceutical Care Lab and Medication Therapy Management**Credits 2. 2 Lab Hours.**

This course is preparation for the practice of pharmacy in ambulatory and/or institutional settings. Emphasis is placed on skills in using patient assistance devices as well as patient counseling, education and assessment. Didactic instruction is incorporated with experiential rotation inter-professional settings with credit earned toward medication therapy management certification. The application of appropriate communication and documentation is stressed. Offered: Spring semester.

Prerequisite: P3 Standing.

PHAR 872 Social-Behavioral Aspects of Patient Care**Credits 2. 2 Lecture Hours.**

This course focuses on behavioral change relative to public health, health education, preventive health, health promotion and pharmacological practice. The course utilizes historical and cross-cultural examples to examine medication-taking experiences and their influence on drug-taking behaviors. Integration of information from both pharmaceutical and social sciences allows for the exploration of how and why drugs are discovered and used. Offered: Spring semester.

Prerequisite: P3 standing.**PHAR 873 Pharmacy Professionalism****Credit 1. 3 Lecture Hours.**

Review and assess the knowledge, skills, attitudes and behaviors required of a professional pharmacist; offered in a practicum format using active learning techniques to understand the integration of content from the didactic curriculum in the development as professionals.

Prerequisite: Third year Pharmacy classification.**PHAR 875 Clinical Pharmacokinetics****Credits 3. 2 Lecture Hours. 1 Lab Hour.**

This course is designed to reinforce the application of pharmacokinetic and pharmacodynamic principles along with enhanced of critical thinking and confident clinical decision-making regarding therapeutic drug monitoring. Patient-centered therapeutic plans that address pharmacokinetic problems are applied in the management of clinical cases. Offered: Spring semester.

Prerequisites: PHAR 810 and PHAR 811.**Corequisites:** PHAR 812, PHAR 813 and PHAR 815.**PHAR 876 APPE: Acute Care General Medicine****Credits 6. 6 Other Hours.**

Substantial exposure and experience in the comprehensive treatment and inpatient management of the disease states of adult patients that are admitted to the hospital or other institutionalized setting with common acute or chronic conditions (e.g., hypertension, asthma, congestive heart failure, diabetes, or infectious diseases); utilization of problem-solving skills, development of therapeutic plans, monitoring lab values, and assessment for drug interactions and adverse drug reactions while tracking patients through completion of their therapy.

Prerequisite: P4 classification.**PHAR 877 APPE: Ambulatory Care****Credits 6. 6 Other Hours.**

Preparation in treating patients in a general or specialized outpatient setting that are typically not seriously ill; focus on the medication management of specific diseases (such as hypertension, diabetes, asthma, etc.) or the general care of patients with chronic conditions; utilization of problem-solving skills, patient medication counseling, therapeutic monitoring, as well as addressing interaction, side effects and compliance issues in the care of these patients.

Prerequisite: P4 classification.**PHAR 878 APPE: Community Practice****Credits 6. 6 Other Hours.**

Exposure to the daily clinical activities of the community pharmacy setting with the focus on a patient care approach; learn the goals of clinical intervention and the steps necessary to execute effectively those interventions; engagement in evaluating and solving drug-related problems, in interacting with the patient and acting as a primary health care source.

Prerequisite: P4 classification.**PHAR 879 APPE: Hospital/Health System Pharmacy****Credits 6. 6 Other Hours.**

Understanding the various aspects of health-system pharmacy services; includes provision of products, clinical pharmacy services and pharmacy management issues; approach with an understanding that the ultimate goal in all health-system pharmacies is improving patient care.

Prerequisite: P4 classification.**PHAR 880 APPE: Critical Care****Credits 6. 6 Other Hours.**

Preparation in treating patients in a critical care setting; focus on the medication management of patients in critical condition; utilization of problem-solving skills, patient medication counseling, therapeutic monitoring, as well as addressing interaction, side effects and compliance issues in the care of these patients.

Prerequisite: P4 classification.**PHAR 882 APPE: Academic Internship****Credits 6. 6 Other Hours.**

Introduction to the academic practice of pharmacy; development and enhancement of knowledge and understanding of an academic career, development of personal teaching skills, and exposure to the various responsibilities associated with a full-time faculty position in pharmacy education; responsible for didactic and small group teaching, including active learning techniques, assessment, instructional technology and learning theories; exposure to class coordination techniques and the administrative components of academia.

Prerequisite: P4 classification.**PHAR 883 APPE: Extended Care****Credits 6. 6 Other Hours.**

Opportunity to learn how to provide patient care for those who are housed in an extended-care facility or who are undergoing rehabilitation; emphasis on the ability to demonstrate empathy and to work in inter-professional teams; learn the different treatment options and therapeutic modalities utilized in these patient populations and take into consideration the different pharmacokinetic properties, dosing principles and therapeutic drug monitoring required of this population.

Prerequisites: P4 classification and approval of preceptor.**PHAR 884 APPE: Geriatrics****Credits 6. 6 Other Hours.**

Opportunity to learn how to treat illnesses that commonly afflict older patients; learn the different treatment options and regimens utilized in this patient population and take into consideration the different pharmacokinetic properties, dosing principles and therapeutic drug monitoring required of this population.

Prerequisite: P4 classification.**PHAR 886 APPE: Infectious Diseases****Credits 6. 6 Other Hours.**

Gain professional skills in an infectious disease practice environment; opportunity to participate effectively in the patient care decision-making process; engaged in a variety of clinical activities, functioning as an integral member of the health care team; emphasis on the ability to demonstrate their understanding of common infectious processes, to evaluate critically, patients for appropriate antimicrobial pharmacotherapy, and to communicate recommendation to other health care professionals.

Prerequisite: P4 classification.

PHAR 887 APPE: End-of-Life Care**Credits 6. 6 Other Hours.**

Gain professional skills with end of life care; opportunity to participate effectively in the process of providing patient care and comfort in the hospice or other setting; participate in a variety of activities, functioning as an integral member of the health care team; emphasis on the ability to demonstrate empathy and understanding of common indications for and treatment modalities in end-of-life.

Prerequisite: P4 classification.

PHAR 888 APPE: Public Health**Credits 6. 6 Other Hours.**

Exposure to the daily clinical activities of the pharmacist practicing in a rural health setting; types of patients and disease states encountered by will vary based on the individual site; disaster preparedness and bioterrorism preparation and countermeasures may be part of this experience; partner with communities and/or health departments to assess health priorities and develop plans to address identified needs; evaluation and solving drug-related problems, patient interaction and acting as a primary health care source to the medically underserved; development of an understanding of inter-professional working relationships.

Prerequisite: P4 classification.

PHAR 892 APPE: Drug Information**Credits 6. 6 Other Hours.**

Serve as a primary provider of drug information in a structured environment that possesses both the resources and the faculty expertise in clinical information requests, design and execute a systematic search strategy, assimilate the information retrieved and formulate and communicate an appropriate response; continue to build knowledge base of available drug information resources and gain practical experience in critically evaluating those resources; prepare drug monographs and journal articles to further develop medical writing skills and orally present journal articles and drug reviews.

Prerequisite: P4 classification.

PHAR 893 APPE: Pediatrics**Credits 6. 6 Other Hours.**

Opportunity to learn how to treat acute and chronic illnesses that commonly afflict infant and child patients; learn the different treatment options and regimens utilized in this patient population and take into consideration the different pharmacokinetic properties, dosing principles and therapeutic drug monitoring of children.

Prerequisite: P4 classification.

PHAR 894 APPE: Oncology**Credits 6. 6 Other Hours.**

Introduction to clinical oncology pharmacy practice; designed to develop further the knowledge and understanding of the pharmaceutical support to the inpatient oncology service patient including staging, treatment, dosing, monitoring and supportive care issues, including comfort, empathy and pain management; responsible for designing a treatment plan for cancer patients, identifying and following monitoring parameters and supplying specific supportive regimens based on current literature and guidelines.

Prerequisite: P4 classification.

PHAR 896 APPE: Cardiology**Credits 6. 6 Other Hours.**

Introduction to clinical pharmacy practice in the cardiology setting; further develop the knowledge and understanding of the pharmacotherapy of patients with a variety of cardiac conditions; responsible for monitoring patients, utilizing appropriate resources to provide patient-centered care and providing drug information to other health care professionals; develop the skills necessary to evaluate critically, patients for appropriate pharmacotherapy and to communicate recommendations to other health care providers.

Prerequisite: P4 classification.

PHAR 897 APPE: Mental Health**Credits 6. 6 Other Hours.**

Gain professional skills in the area of behavioral modification; designed to further develop the knowledge and understanding of the methods, monitoring and skills necessary to provide patient care for adult patients with psychological or behavioral disorders; responsible for assessing, designing and monitoring patients with various psychological or behavioral disorders and presenting therapeutic recommendations as a member of an interdisciplinary team; develop the skills necessary to provide care to these patients.

Prerequisite: P4 classification.

PHAR 898 APPE: Emergency Medicine**Credits 6. 6 Other Hours.**

Rotation through different areas of an emergency department (ED); may necessitate a flexible schedule; direct interaction with the ED pharmacist assisting with conscious sedation, critical responses, reviewing lab values, patient charts, medication histories, indications and safety of medications administered in the emergency department; spent interacting with other disciplines, attending meetings, answering drug information questions or completing projects.

Prerequisite: P4 classification.

PHAR 899 APPE: Specialty Pharmacy Practice**Credits 6. 6 Other Hours.**

Exploration of a specific area of interest that may or may not be a traditional career path in pharmacy under the supervision of a preceptor; specialty areas vary according to preceptor and site availability; potential opportunities include compounding, specialty independent pharmacy, nuclear pharmacy, veterinary practice, medical missions, pharmaceutical industry, nutritional practice or others.

Prerequisite: P4 classification.

PHEB - Public Hlth Epide Biost

PHEB 600 Fundamentals of Epidemiology**Credits 3. 3 Lecture Hours.**

This is the core epidemiology course for non-major students. It is an overview course intended to familiarize students with the basic principles and applications of epidemiological concepts and methods in the study of public health problems in populations. The focus of the course is on the interpretation and assessment of epidemiologic research, both descriptive and analytic, and its application to public health practice and relevance to the key disciplines of public health.

PHEB 602 Biostatistics I**Credits 3. 3 Lecture Hours.**

An introduction to statistical issues in public health, including basic probability, significance levels and confidence intervals, interpretation of public health data, and specific statistical techniques such as regression, analysis of variance, nonparametric techniques and categorical data.

PHEB 603 Biostatistics II**Credits 3. 3 Lecture Hours.**

A second course in biostatistical methods that emphasizes linear models and designed experiments. Designed for student wishing a deeper understanding of topics introduced in PHEB 602.

Prerequisite: PHEB 602.**PHEB 605 Epidemiologic Methods I****Credits 3. 3 Lecture Hours.**

This is the core epidemiology course for major students in the Department of Epidemiology and Biostatistics. It is an overview course intended to familiarize students with the basic principles and applications of epidemiological concepts in the study of disease occurrence in populations. The focus of the course is on the interpretation and assessment of epidemiological research, as well as the design and conduct of descriptive and analytic epidemiologic studies.

PHEB 606 Survival Analysis**Credits 3. 3 Lecture Hours.**

Introduce statistical methods for survival (time-to-event) data analysis. Discuss the basic concepts of survival analysis, including hazard functions, survival functions, types of censoring, Kaplan-Meier estimates, logrank tests.

Prerequisites: PHEB 602 and PHEB 603.**PHEB 607 Sample Survey Methodology****Credits 3. 3 Lecture Hours.**

The purpose of this course is to prepare students to examine the unified set of concepts, principles and methodologies that govern sample survey methodology. It is designed to build on a foundation of coherent survey concepts and foster the understanding of the principles and methods of sampling theory, survey design, analysis and interpretation. This course is designed for epidemiology track and other public health students requiring a more thorough knowledge of the concepts and methods used in survey research. This course stresses survey designs, methodological issues and analytic methods as they relate to conduct of surveys.

Prerequisites: PHEB 602 and PHEB 603.**PHEB 609 Categorical Data Analysis****Credits 3. 3 Lecture Hours.**

This course will introduce the basic theory and applications of methods used to analyze categorical data. The theory will be covered but the emphasis will be on selecting appropriate analysis strategies, analyzing data and interpreting results of those analyses. No background in calculus or matrix algebra is required.

Prerequisites: PHEB 602 and PHEB 603 (or STAT 651 and STAT 652).**PHEB 610 Epidemiologic Methods II****Credits 3. 3 Lecture Hours.**

An intensive introduction to epidemiological concepts and methods for students in the epidemiology concentration and others who will collaborate in – or be required to – interpret the results of epidemiological studies. Emphasis is placed on calculation and interpretation of crude and adjusted data, measures of association, and study design. Course restricted to PHEB students only or approval of instructor required.

Prerequisites: PHEB 602 and PHEB 605 or concurrent enrollment in PHEB 603.**PHEB 611 Epidemiologic Methods III****Credits 3. 3 Lecture Hours.**

In-depth treatment of key methodological and analytic topics in epidemiology. Emphasis on study design and implications for data analysis, such as confounding, model selection and effect modification. Analytic techniques using logistic regression and stratified analysis will be emphasized. Restricted to PHEB students only or approval of instructor required.

Prerequisites: PHEB 610 and PHEB 603.**PHEB 612 Data Management / Computing****Credits 3. 3 Lecture Hours.**

An introduction to the principles of data management, techniques in designing and implementing databases for large data systems, techniques for communicating between computing environments, and introduction to statistical software.

PHEB 613 Field Epidemiology Methods**Credits 3. 3 Lecture Hours.**

Introduction to methods used by epidemiologists; conduct outbreak investigations from start to finish; study design; questionnaire development; interviewing techniques and data analysis; practical component; includes service learning component; required to sign up for EPIAssist; participation in activities with health departments local and regional.

Prerequisites: Public health majors, MPH in Epidemiology and Biostatistics or doctoral students from other disciplines.**PHEB 614 Analysis of Longitudinal and Multilevel Data****Credits 3. 3 Lecture Hours.**

This course presents modern approaches to the analysis of longitudinal and multilevel data. The random effects model and the generalized estimating equations are studied. Both continuous and discrete outcome are considered. Missing data issue is discussed.

Prerequisites: PHEB 602, PHEB 603 and PHEB 609.**PHEB 615 Disaster Epidemiology****Credits 3. 3 Lecture Hours.**

Students will be taught the basic principles, terms, and epidemiological tools for use in disasters. Topics to be covered include: 1) public health consequences associated with various types of disasters; 2) rapid health assessment of disaster-affected populations; 3) establishment of emergency surveillance systems in disaster settings; 4) the federal and state disaster response framework; 5) selected case studies of disasters and their effects on populations; and 6) topics related to disasters in international health settings. Each class session will have a lecture component, team exercise/case study and discussion.

PHEB 616 Statistical Methods of Genetics**Credits 3. 3 Lecture Hours.**

This is an elective course that will introduce students to the statistical methods used in the search for genetic factors that may be associated with diseases. While the mathematics underlying the methods will be presented, emphasis will be placed on understanding concepts, using software to analyze example data and interpreting the results of those analyses.

Prerequisites: PHEB 602 and PHEB 603 or STAT 651 and STAT 652.**PHEB 618 Spatial Epidemiology****Credits 3. 3 Lecture Hours.**

This course provides a broad introduction to the principles and methods of spatial epidemiology, with particular emphasis on the use and applications of Geographical Information Systems (GIS), and spatial analysis methods in health research and public health practice.

PHEB 619 Infectious Disease Epidemiology**Credits 3. 3 Lecture Hours.**

Principles and practices of epidemiology appropriate for the study of communicable diseases. Course focuses on methodology, public health concerns, patterns of transmission and newly discovered infectious diseases.

Prerequisite: PHEB 600 or PHEB 605.

PHEB 620 Cancer Epidemiology**Credits 3. 3 Lecture Hours.**

A review of the principles and methods used in cancer epidemiology. The course focuses on cancer etiology and control with emphasis on race/ethnicity and urban/rural differences in cancer incidence and mortality.

Prerequisite: PHEB 600 or PHEB 605.

PHEB 621 Foundations of Maternal and Child Health**Credits 3. 3 Lecture Hours.**

Determinants, mechanisms systems that maintain health, safety, well-being of children and their families in communities and societies; introduction to maternal and child health populations; conceptual frameworks; health indicators; research issues, program planning and evaluation.

PHEB 622 Reproductive And Perinatal Epidemiology**Credits 3. 3 Lecture Hours.**

Epidemiology of major reproductive health outcomes, including infertility, fetal loss, birth weight, congenital malformations and infant mortality. Review of current knowledge of determinants of these outcomes.

Prerequisite: PHEB 600 or PHEB 605.

PHEB 624 Social Epidemiology**Credits 3. 3 Lecture Hours.**

This course entails an exploration and examination of the social determinants and distribution of physical and mental health outcomes. These determinants include socioeconomic inequalities, stress and social organization. The course focuses on the development and evaluation of testable hypotheses concerning the relationship between social conditions and health.

Prerequisite: PHEB 600 or PHEB 605.

PHEB 625 Survey and Missing Data Analysis**Credits 3. 3 Lecture Hours.**

Understanding and application of common methodologies; analysis of complex sample survey data and related missing data problems; survey sampling methods and analytic methods.

Prerequisites: PHEB 602, PHEB 603 or equivalent; PHEB 609 preferred but not required; public health majors.

PHEB 626 Occupational And Environmental Epidemiology**Credits 3. 3 Lecture Hours.**

This course involves the examination of occupational and environmental exposures related to disease and injury. Topics covered include general methods used in occupational and environmental epidemiology, exposure assessment, surveillance, and the relation of occupational and environmental exposure to adverse reproductive outcomes, cancer, diseases and the ergonomic-related outcomes.

Prerequisite: PHEB 600 or PHEB 605.

PHEB 627 Chronic Disease Epidemiology**Credits 3. 3 Lecture Hours.**

This course will provide insight into the epidemiologic concepts and research needed in the study of chronic disease and its associated risk factors. This course is intended to provide students with an appreciation of the major trends in the incidence and prevalence of specific chronic diseases. The focus will be from a U.S. and international perspective. Methodological challenges relevant to chronic disease epidemiologic research will be addressed in lectures, readings, student discussions, presentations and assignments.

Prerequisite: PHEB 605.

PHEB 628 Chronic Diseases: Primary and Secondary Prevention**Credits 2. 2 Lecture Hours.**

This course exposes students to the breadth of chronic diseases affecting public health and methods of prevention, including: 1) Screening for Early and Asymptomatic Conditions, 2) Development of Guidelines, 3) Cancer, 4) Cardiovascular Disease, 5) Diabetes, 6) Other conditions: Respiratory Diseases, Musculoskeletal Disorders, Disabilities, Traumatic Injuries, Neurological Disorders, Psychiatric Illness and Stress, Childhood Cognitive Disorders, Kidney and Liver Diseases, Skin Disorders, Visual and Hearing Disorders, Blood Disorders, 7) Tobacco Use, 8) Obesity and Nutrition. Restricted to MD or DO in Preventive Medicine Residency.

PHEB 630 Public Health Epidemiology For Military Personnel**Credits 3. 3 Lecture Hours.**

This course provides an introduction to Epidemiology and all students will emerge with the tools needed to identify, analyze and apply interventions useful in understanding how disease occurs, propagates and is controlled.

PHEB 681 Seminar**Credit 1. 1 Lecture Hour.**

Series of presentations by students, faculty, national and international guest speakers; presentations on various maternal and child (MCH) topics; experience in presenting research and improving presentation skills; introduction to research topics of faculty and external MCH experts; increase knowledge of the MCH field.

PHEB 684 Practicum**Credits 1 to 3. 1 to 3 Other Hours.**

Field placement experience in which students work closely with a departmental faculty member and (an) appropriate field professional(s) applying skills and techniques acquired through coursework. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of student's academic advisor.

PHEB 685 Directed Study**Credits 1 to 6. 1 to 6 Other Hours.**

Student investigation of a topic not covered by other formal courses. May be repeated for a maximum of 6 hours total credit.

Prerequisite: Approval of student's academic advisor.

PHEB 686 Directed Research**Credits 1 to 3. 1 to 3 Other Hours.**

Student research initiative not within the scope of a thesis or dissertation. May be repeated for a maximum of 6 credits.

Prerequisite: Approval of student's academic advisor.

PHEB 689 Special Topics**Credits 1 to 3. 1 to 3 Lecture Hours.**

Revolving topics seminar in an area of specialization within the department. May be repeated for credit.

PHEB 691 Research**Credits 1 to 6. 1 to 6 Other Hours.**

Research for thesis or project. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of the student's academic advisor and department head.

PHEB 791 Doctoral Capstone**Credits 1 to 9. 1 to 9 Other Hours.**

Doctoral Dissertation or equivalent project(s). Must be taken on a satisfactory/unsatisfactory basis.

PHEO - Public Hlth Enviro Occu

PHEO 600 Principles of Environmental and Occupational Health**Credits 3. 3 Lecture Hours.**

Overview of nature and magnitude of environmental and occupational disease; sources of exposure, methods of monitoring and modeling exposure; review of target organs and potential effects of specific chemicals; discussion of workplace hazards and monitoring programs.

PHEO 603 Introduction to Environmental and Occupational Health for Military Personnel II**Credits 3. 3 Lecture Hours.**

The goal of the course is for the student to be able, given a scenario and pertinent information, make sound management decisions and effectively employ public health policy among military public health specialties.

PHEO 605 Chemical Hazard Exposure**Credits 3. 3 Lecture Hours.**

Methods for sampling hazardous chemicals in various environmental media; planning the sample collection; analytical process to ensure that data quality is sufficient to meet project objectives; Data Quality Objectives; development of a QAPP and QA/QC protocols including data validation.

PHEO 606 Applied Health Risk Assessment: Humanitarian Settings for Military Personnel**Credits 3. 3 Lecture Hours.**

The overall goal of the course is for the student to be able, given a scenario and pertinent information, make sound management decisions and effectively employ public health policy.

PHEO 607 Applied Health Risk Assessment: Operational Risk Assessment and Management for Military Personnel**Credits 3. 3 Lecture Hours.**

The overall goal of the course is for the student to be able, given a scenario and pertinent information, make sound management decisions and effectively employ public health policy.

PHEO 610 Toxicology in Public Health**Credits 3. 3 Lecture Hours.**

Concepts of toxicology in public health; emphasis on environmental and occupation exposures; distribution, absorption, metabolism and elimination of toxicants; mechanisms of injury at the cellular, organ and systemic level following exposure to toxic chemicals; exposure assessment/risk assessment for non-toxicologists and the use of toxicology in decision-making.

PHEO 611 Environmental Health Assessment**Credits 3. 3 Lecture Hours.**

This course will review methods to evaluate the public health implications of exposures to environmental contamination. These methods are used to determine whether people have been, are being, or may be exposed to hazardous substances and if so, whether that exposure is harmful, or potentially harmful, and should therefore be stopped or reduced. Students will gain insight into the variety of tasks associated with the environmental health assessment process.

Prerequisite: PHEO 600 and PHEB 600.

PHEO 612 Global Environmental Health**Credits 3. 3 Lecture Hours.**

Review of the globalization and transformation of local problems into international issues; environmental problems that developing and underdeveloped countries face due to overpopulation, lack of natural resources and lack of proper ways or technologies to dispose of hazardous wastes.

Prerequisite: Graduate classification.

PHEO 613 Introduction to Environmental Health Disparities**Credits 3. 3 Lecture Hours.**

Disproportionate burdens of environmental contamination, whether urban or rural, and the environmental health inequalities affecting communities of color; history and politics of environmental justice movements in the U.S., and other parts of the world with a focus on the methods and materials used in the study of environmental racism, environmental risk, and sustainable development; empirical evidence on distributions of environmental quality and health, enforcement of regulations, access to resources to respond to urban, rural, and industrial problems, and the broader political economy of decision-making around environmental and health issues.

PHEO 614/SCSC 614 Biodegradation and Bioremediation**Credits 3. 3 Lecture Hours.**

Processes affecting the biodegradation of organic chemicals in the environment; assessment of the utility of various remedial procedures, including biodegradation and bioremediation in site specific situations; methods of site assessment and quantitative risk characterization.

Prerequisite: Organic chemistry or approval of instructor.

Cross Listing: SCSC 614.

PHEO 615 Environmental Measurement**Credits 3. 3 Lecture Hours.**

Theory and practice of analytical methods used in the study of environmental sciences; data quality of objectives, instrumental and wet chemical techniques used in measurement of environmental quality parameters and contaminants.

Prerequisite: College-level chemistry or approval of instructor.

PHEO 617 Occupational Assessment**Credits 3. 3 Lecture Hours.**

This course is designed to provide students with an understanding of occupational exposure assessment. Students will gain experience in, sample collection for occupational settings and occupational exposure analysis.

PHEO 618 Occupational Safety**Credits 3. 3 Lecture Hours.**

This course is designed to provide students with an understanding of occupational safety and health topics they will encounter as safety professionals. Students will gain experience and knowledge in the areas of construction safety, fall protection systems, aerial lift safety, emergency response communication, hazard identification, accident investigation techniques, OSHA regulations, their role as a safety professional during an OSHA inspection, workers compensation, safety in rural and developing areas and ethics in safety.

PHEO 621 Transport and Persistence of Contaminants in the Environment**Credits 3. 3 Lecture Hours.**

Fundamental concepts for understanding fate, transport and persistence of contaminants in the environment; models used to estimate environmental concentrations of chemicals of human health concern; contaminant concentration and duration that affect human exposure and ecosystem health; short and long term impact of accidents of environmental and public health concern.

Prerequisite: Graduate classification.**PHEO 625 Environmental and Occupational Health Survey Methods****Credits 3. 3 Lecture Hours.**

Examination of discipline specific concepts, principles and methodologies that govern environmental and occupational survey methodology.

Prerequisite: PHEO 600.**PHEO 630 Environmental/Occupational Diseases****Credits 3. 3 Lecture Hours.**

Identification, evaluation and quantification of risk factors for environmental and occupational diseases, using classic and current examples of exposures involving chemical, physical and biologic agents. Selection of appropriate design and groups. Exposure assessment, including biomarkers and molecular dosimetry. Genetics, gender, age, socioeconomic and other factors affecting susceptibility.

Prerequisite: College-level mathematics.**PHEO 639 Hazardous Materials Management and Compliance****Credits 3. 3 Lecture Hours.**

Types of hazardous materials; system of environmental laws governing management of hazardous materials as well as contaminants in air, water and solid waste; appropriate management and regulatory compliance; hazardous materials spills and response; hazard communication and right-to-know regulations; hazard communication benchmarking and performance criteria.

PHEO 640 Industrial Hygiene**Credits 3. 3 Lecture Hours.**

Considers methods to measure and reduce workplace hazards; evaluation of engineering controls and personal protective equipment; includes potential chemical, physical, ergonomic and biological exposures. Review of major legislation affecting workplace environment.

PHEO 645 Health and Safety at Hazardous Waste Sites**Credits 3. 3 Lecture Hours.**

Course covers OSHA compliance issues related to the protection of personnel engaged in on-site remediation activities. Students who satisfactorily complete the course meet the requirements for initial training under 20 CFR 1910.120 (HAZWOPER) and receive a certificate. Hands-on activities/workshops in the areas of personal protective equipment selection and use, sources of chemical information, decontamination procedures, air monitoring equipment, materials handling, and health and safety planning. Lab fee required.

PHEO 650 Risk Assessment I**Credits 3. 3 Lecture Hours.**

Introduction to the general methodology of Quantitative Risk Assessment; introduction to methods of modeling exposure and selection of toxicity values, as well as risk characterization. Students utilize case studies to learn the general methods of risk assessment; also reviews the importance of and methods for risk communication and management.

PHEO 655 Human Factors**Credits 3. 3 Lecture Hours.**

Basic understanding of the theory and practice of human factors as well as application of these to an industry project; topics presented within the framework of humans being part of a functioning systems.

PHEO 670 Professional Perspectives in Environmental Health**Credits 1 to 3. 1 to 3 Lecture Hours.**

The purpose of this course is to study the ethics and values of environmental public health. From a practice standpoint, we will study the 10 essential services of environmental health. We will also discuss three critical varieties of environmental ethics: conservation ethics, environmental justice, and sustainability ethics. In regards to policy, we will explore, Brownfields redevelopment, cleanup, and development and restoration policies.

PHEO 671 Environmental and Occupational Health Communication**Credits 3. 3 Lecture Hours.**

Topics in environmental and occupational health communication, including risk communication, messages, key audiences, channels, communication plans and assessment of communication interventions; includes case studies of U.S. and global environmental and occupational health communication issues.

Prerequisite: Doctoral classification or approval of instructor.**PHEO 674 Environmental and Occupational Health Research Methods****Credits 3. 3 Lecture Hours.**

Topics in occupational and environmental health research methods including research design, sampling, data collection, exposure assessment and measurement.

Prerequisite: PHEO 600.**PHEO 675 Water and Environmental Public Health****Credits 0 to 3. 0 to 3 Lecture Hours.**

To provide a broad understanding of the elements of water and environmental public health and how these major environmental issues affect our society. It will examine water-related health issues, scientific understanding and causes and associations, and possible future approaches to understanding the major environmental health problems in developed and developing countries.

PHEO 676 Environmental Sustainability and Public Health**Credits 3. 3 Lecture Hours.**

Fundamental understanding of the relationship between environmental sustainability and population. Examples include: nexus between water, energy, and food nexus influence on environmental sustainability and subsequently effect on public health.

Prerequisite: Graduate classification.

PHEO 678 Occupational Biomechanics**Credits 3. 3 Lecture Hours.**

This course will focus on research methods in occupational biomechanics to understand and identify/analyze underlying risks associated with the development of work-related musculoskeletal disorders. Topics will include assessing injury risk, balance and posture control, human motion analysis, muscle activity, fatigue, and ergonomics for special populations such as the aging and obese. Students will become familiar with the use of laboratory experimental methods and existing field-friendly ergonomic evaluation techniques.

PHEO 679 Ergonomics of the Upper Extremities**Credits 3. 3 Lecture Hours.**

Fundamental topics upon which models for the prevention and control of distal upper extremity disorders are constructed. Focus is on topics including human anatomy, neurophysiology, electrophysiology and worker capacity evaluation.

PHEO 681 Seminar in Environmental and Occupational Health**Credit 1. 1 Lecture Hour.**

This course reviews the foundational literature on environmental and occupational health (EOH). The course will begin with an introductory look at the literature from broad topics followed by specific reviews of current departmental research topics and those found in industry. The course will also examine the application of EOH in public health research and its application to public health practice and commercialization of ideas for supporting efforts to improve environmental and occupational health.

PHEO 682 Industrial and System Safety**Credits 3. 3 Lecture Hours.**

Course covers general concepts and techniques of safety upon which more detailed and advanced applications may be based. In addition, concepts will include current system safety analysis techniques, failure mode and effect and fault tree analysis, as well as economic analysis for presentation of alternative solutions for problem solving.

Prerequisite: Approval of instructor.**PHEO 684 Practicum****Credits 1 to 3. 1 to 3 Other Hours.**

Field placement experience in which students work closely with a departmental faculty member and appropriate field professional(s), applying skills and techniques acquired through course work. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of academic advisor.**PHEO 685 Directed Study****Credits 1 to 3. 1 to 3 Other Hours.**

Student investigation of a topic not covered by other formal courses. May be repeated for a maximum of 6 hours total credit.

Prerequisite: Approval of student's academic advisor.**PHEO 686 Directed Research****Credits 1 to 3. 1 to 3 Other Hours.**

Student research initiative not within the scope of a thesis or dissertation. May be repeated for a maximum of 6 credits.

Prerequisite: Approval of student's academic advisor.**PHEO 689 Special Topics In Environmental And Occupational Health****Credits 1 to 4. 1 to 4 Other Hours.**

Revolving topics seminar in an area of specialization within the department. May be repeated for credit.

PHEO 691 Research**Credits 1 to 6. 1 to 6 Other Hours.**

Research for thesis or project. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of the student's academic advisor and department head.**PHEO 791 Doctoral Capstone****Credits 1 to 9. 1 to 9 Lecture Hours.**

Research for doctoral dissertation. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Approval of student's academic advisor and department head.

PHIL - Philosophy

PHIL 611 Ancient Philosophy**Credits 3. 3 Lecture Hours.**

Greek and Roman philosophy from 600 B.C. to 300 A.D.; emphasis on Plato and Aristotle.

Prerequisite: Approval of instructor.**PHIL 616 Modern Philosophy****Credits 3. 3 Lecture Hours.**

Developments in philosophy from the Renaissance through the Enlightenment: Renaissance humanism and natural science, 17th- and 18th-century empiricism and rationalism, idealism; major thinkers including Descartes, Hume, Kant, Hegel. May be repeated for credit as content varies.

Prerequisite: Approval of instructor.**PHIL 620 Contemporary Philosophy****Credits 3. 3 Lecture Hours.**

19th- and 20th-century philosophical movements: phenomenology, existentialism, positivism, pragmatism, analysis, process thought. May be repeated for credit as content varies.

Prerequisite: Approval of instructor.**PHIL 623 American Philosophy****Credits 3. 3 Lecture Hours.**

The genesis of American philosophical thought from the seventeenth century until the work of Emerson; subsequent concentration on the philosophies of Pierce, James, Royce, Dewey, Mead, Santayana and Whitehead.

Prerequisite: Approval of instructor.**PHIL 624 Latin American Philosophy****Credits 3. 3 Lecture Hours.**

Reading and examination of the philosophical writings of some of the most important Latino/as (or Hispanic) contributors to the history of philosophy.

PHIL 625 Philosophical Inquiry in Schools**Credits 3. 3 Lecture Hours.**

In-depth exploration of the theory and practice of pre-college (K-12) philosophy.

Prerequisites: Approval of instructor.**PHIL 630 Aesthetics****Credits 3. 3 Lecture Hours.**

Metaphor, the ontology of artworks, art and artifactuality, aesthetic attitudes, concepts of aesthetic appraisal such as beauty and sublimity and theory of tropes.

Prerequisite: Approval of instructor.

PHIL 631 Philosophy of Religion**Credits 3. 3 Lecture Hours.**

Investigation of metaphysical and epistemological issues concerning religious claims, beliefs and experiences.

Prerequisite: Approval of instructor.**PHIL 632 Social and Political Philosophy****Credits 3. 3 Lecture Hours.**

Theories of justice, equality, liberty and authority in social and political institutions; individualism and the social contract; political philosophy of writers such as Plato, Aristotle, Machiavelli, Locke, Rousseau, Marx, Dewey and Rawls.

Prerequisite: Approval of instructor.**PHIL 635 Ethical Theory****Credits 3. 3 Lecture Hours.**

Theories of moral value and conduct, moral language and argumentation; consequentialist and deontological approaches to ethics; ethical naturalism; theories of virtue.

Prerequisite: Approval of instructor.**PHIL 640 Epistemology****Credits 3. 3 Lecture Hours.**

Nature and origin of knowledge, skepticism, belief, truth, rationality, justification and reliability and knowledge of necessary truths.

Prerequisite: Approval of instructor.**PHIL 641 Mathematical Logic I****Credits 3. 3 Lecture Hours.**

The metatheory of propositional and first-order logic.

Prerequisite: Graduate classification or approval of instructor.**PHIL 642 Mathematical Logic II****Credits 3. 3 Lecture Hours.**

Continuation of PHIL 641. Compactness, The Lowenheim-Skolem Theorems, computability theory and Church's thesis, formal arithmetic, Godel's Incompleteness Theorems, Tarski's Theorem and Church's Theorem; other topics might include systems of modal logic, intuitionistic logic and more advanced issues in set theory.

Prerequisite: 641 or approval of instructor.**PHIL 643 History and Philosophy of Logic****Credits 3. 3 Lecture Hours.**

Selected topics on the historical development of logic; philosophical views of the nature of logical theory; the role of logical metatheory in the development of logic. May be repeated for credit as content varies.

Prerequisite: PHIL 341 or 641 or approval of instructor.**PHIL 645 Philosophy of Science****Credits 3. 3 Lecture Hours.**

Philosophy of the natural and social sciences, including the nature of theories and laws, the notion of causation, probability and determinism and the nature of theoretical change.

Prerequisite: Approval of instructor.**PHIL 646 Philosophy of a Particular Science****Credits 3. 3 Lecture Hours.**

Focus on methodological, epistemological and ontological issues in physics, or one of the special sciences, such as biology, psychology, cognitive science, economics. Application of philosophical methods to theoretical issues in the particular science. Relationships between theories and explanations of the particular science more basic sciences or other special sciences. May be repeated for credit for courses focusing on different sciences.

Prerequisite: Approval of instructor.**PHIL 650 Metaphysics****Credits 3. 3 Lecture Hours.**

Classical and contemporary treatments of the nature of reality, God, the existence of universals, space, time, causality; realism and antirealism, the existence and nature of abstract entities, the nature of events, the nature and logic of time and modality, freedom and determinism, and personal identity.

Prerequisite: Approval of instructor.**PHIL 655 Philosophy of Mind****Credits 3. 3 Lecture Hours.**

The mind-body problem, personal identity, thought and intentionality, action and responsibility; materialism, behaviorism, functionalism. May be repeated for credit as content varies.

Prerequisite: Approval of instructor.**PHIL 658 Philosophy of Language****Credits 3. 3 Lecture Hours.**

The nature of language, the various uses of language and their philosophical import, the nature of meaning, truth, reference and issues surrounding formal representations of natural languages. May be repeated for credit as content varies.

Prerequisite: Approval of instructor.**PHIL 661 Seminar in the History of Philosophy****Credits 3. 3 Lecture Hours.**

Intensive study of a current issue in the history of philosophy. May be repeated for credit with variation in topic.

Prerequisite: Approval of instructor.**PHIL 662 Seminar in Ethics and Value Theory****Credits 3. 3 Lecture Hours.**

Intensive study of current issue in ethics, ethical theory, applied ethics, aesthetics, or the work of particular philosophers in one of these areas. May be repeated for credit with variation in topic.

Prerequisite: Approval of instructor.**PHIL 663 Seminar in Metaphysics and Epistemology****Credits 3. 3 Lecture Hours.**

Seminar in Metaphysics or Epistemology. Intensive study of a current issue in metaphysics, epistemology, or other core areas of philosophy. May be repeated for credit with variation in topic.

Prerequisite: Approval of instructor.**PHIL 664 Seminar in Applied Philosophy****Credits 3. 3 Lecture Hours.**

Intensive study of a topic involving the application of philosophical concepts and theories to an issue arising in another scientific or academic field. May be repeated for credit with variation to topic.

Prerequisite: Approval of instructor.**PHIL 682 Philosophical Authors****Credits 3. 3 Lecture Hours.**

Intensive study of works of an individual important philosopher, their historical context, and criticisms and interpretations of them. May be repeated for credit with different authors.

Prerequisites: Appropriate background in history of philosophy and approval of instructor.**PHIL 683 Philosophical Pedagogy****Credit 1. 1 Lecture Hour.**

Teaching practicum for PhD students in philosophy; detailed examination of all aspects of teaching philosophy to university- and college-level students.

Prerequisite: Enrollment in PhD program in Philosophy or approval of instructor.

PHIL 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Practical experience in an institutional or organizational setting appropriate to analysis and understanding of issues in some area of applied philosophy.

Prerequisite: Approval of committee chair and department head.

PHIL 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Directed studies in specific problem areas in philosophy.

PHIL 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of philosophy. May be repeated for credit.

Prerequisite: Approval of instructor.

PHIL 691 Research**Credits 1 to 15. 1 to 15 Other Hours.**

Research for thesis.

Prerequisites: Approval of department head and committee chair.

PHPM - Public Hlth Pol & Mgmt

PHPM 601 Foundations of Public Health**Credits 3. 3 Lecture Hours.**

An introduction to the field of public health and to rural health conditions, issues, professions, organizations, and policies relevant to the health of rural communities.

Prerequisite: Master of Health Administration Majors.

PHPM 602 Managerial Statistics**Credits 3. 3 Lecture Hours.**

This course will cover analytical techniques to support managerial decision making in health care. The course will cover descriptive statistical techniques for the presentation of health care data and applicability of descriptive statistical techniques; a survey commonly used inferential statistical techniques for data analysis is presented. Throughout the course material, emphasis is on the sources and uses of health care data and information for decision-making, and on the interpretation and evaluation of health care research.

PHPM 603 Managing Healthcare Data and Information**Credits 4. 4 Lecture Hours.**

Applicability of descriptive statistical techniques for the presentation of health care data; presentation of commonly used inferential statistical techniques survey for data analysis.

Prerequisite: Enrollment in Executive MHA.

PHPM 604 Population and Public Health for Health Professionals**Credits 4. 4 Lecture Hours.**

Public health and its concentration areas; examination of how the federal, state and local health care and public health system/infrastructure has evolved; public health problems, diseases and risk factors; role of public health in preventing/alleviating same; reviews the core functions of public health.

Prerequisite: Enrollment in Executive MHA only.

PHPM 605 Introduction to Health Policy and Management**Credits 3. 3 Lecture Hours.**

Prepares students for administrative or policy positions in governmental programs, voluntary health organizations, or in other health service organizations. Supports effectiveness of public health and health services professionals by providing knowledge of health organizations and services and associated management policy issues. Introduces the U.S. health system and health management areas and emphasizes policy topics.

PHPM 606 Health Systems Management**Credits 3 to 4. 3 to 4 Lecture Hours.**

Introduction to conceptual frameworks and practices associated with key functions in the management of complex health organizations.

PHPM 607 Health Workforce: Issues and Challenges**Credits 3. 3 Lecture Hours.**

This course will focus on the development, impact and needs of the U.S. workforce. Options for the future direction and strategies to improve the effectiveness and efficiency of the health workforce will be analyzed.

PHPM 608 Overview of Maternal and Child Health Systems and Policy**Credits 3. 3 Lecture Hours.**

This proposed course is designed to address a growing demand for courses focused on maternal child health. It is designed to be offered to public health students and doctoral students at Health Science Center. In this Health Policy focused MCH course, students will be exposed to a broad range of health policy and health systems level issues concerning maternal child health. Grading and evaluation is based on exams, short quizzes, papers, and participation in classroom discussion.

PHPM 611 Introduction to Military Preventative Medicine Policy & Management II**Credits 3. 3 Lecture Hours.**

Introduction to Military Preventative Medicine Policy & Management II. Focuses on the clinical specialty areas (physicians, nurses, physician assistants and veterinarians) and the knowledge base and skill sets necessary for providers to operate in population-based systems.

PHPM 612 Application in Military Preventative Medicine Policy & Management**Credits 3. 3 Lecture Hours.**

Application in Military Preventative Medicine Policy & Management. Given a scenario and pertinent information, ability to make sound management decisions and effectively employ public health policy.

PHPM 614 Strategic Planning and Marketing**Credits 3 to 4. 3 to 4 Lecture Hours.**

This course offers an introduction to strategic planning and management in health services organizations. Processes and formats employed in strategic planning and marketing are presented and applied in case studies and a final project. Elements of market assessment, environmental analysis and strategy development are presented and applied to course practices.

Prerequisite: PHPM 605 or PHPM 606 prior or concurrently.

PHPM 615 Strategic Planning And Marketing II**Credits 3. 3 Lecture Hours.**

This course builds upon strategic planning and marketing concepts introduced in PHPM 614. It provides an overview of marketing and how it can be applied effectively to health care organizations. The course covers the history of health care marketing, basic marketing concepts and tools, the process of developing and managing a marketing plan, and the nature of health care markets and consumers.

Prerequisites: PHPM 605 or PHPM 606 prior or concurrently and PHPM 614.

PHPM 616 Management of Human Resources**Credits 3 to 4. 3 to 4 Lecture Hours.**

An introduction to the range of human resources issues facing the health delivery system administrator from benefits to grievances and human resources management in health organizations. Course also covers personnel practices such as job analysis and description, recruitment, selection and compensation in various health delivery system settings.

Prerequisite: PHPM 601 prior or concurrent.**PHPM 617 Quality and Process Improvement****Credits 3 to 4. 3 to 4 Lecture Hours.**

Overview of evolving health delivery system quality mechanisms and approaches for maximizing quality control in health care organizations. Includes concepts and practices of quality assessment, control and improvement, and accreditation and outcome analysis in service delivery systems.

Prerequisite: PHPM 602 or PHEB 602 or STAT 651 or STAT 652.**PHPM 619 Organizational Theory****Credits 3. 3 Lecture Hours.**

The primary purpose of this course is to develop competency in application of several major organizational theories to health care systems. During the semester, students will become familiar with central assumptions, predictions, and implications of the following theories: sociology of professions, culture and climate, social networks, agency and stewardship, resource dependence, institutional theory, and change implementation. Restricted to PHPM-PhD students.

PHPM 620 Operations Management**Credits 3 to 4. 3 to 4 Lecture Hours.**

Organized around the types of tactical and operational decisions made by health care operations managers; tactical decisions are medium- and long- term decisions that together determine the processes by which health care services are produced and delivered, while operational decisions are short-term decisions concerned with utilizing resources to meet the objectives of the organization in an efficient manner; building on a "system-based" approach to the health care environment, analytical tools are examined to aid problem solving and decision-making in health care organizations; spreadsheets used to ease computational work, facilitate analysis and aid in the presentation of results; examination of operational decisions through a combination of lectures, problem sets, organizational analysis and readings.

Prerequisites: PHPM 617 and PHPM 631.**PHPM 621 Seminar in Interorganizational Research****Credits 3. 3 Lecture Hours.**

Health services research in interorganizational relations includes applications of theories such as social exchange, transaction costs, resource dependence, organization ecology, political, economic and institutional theory; and their applications to community health networks, integrated delivery systems, and complex market and/or public policy approaches to health services.

Prerequisite: PHPM 619.**PHPM 622 Management of Innovation In Health Services****Credits 3. 3 Lecture Hours.**

This course examines the processes through which innovation is identified, studied, implemented, evaluated, and disseminated with particular attention to organization theory applied to innovation in the development, structure, and performance of health care organizations and/or health systems.

Prerequisite: PHPM 619 or PHPM 621.**PHPM 623 Health Care Financial Management I****Credits 3 to 4. 3 to 4 Lecture Hours.**

Course is designed as an overview of health financing and techniques for financial management in health service settings, blending theory and practice through lecture discussion and case analysis. This course also examines major sources of public and private health services funding.

PHPM 624 Health Care Financial Management II**Credits 3. 3 Lecture Hours.**

This is an intermediate course on health care financial management which covers several topics from PHPM 623 in depth and introduces new topics and tools relating to capital financing, financial evaluation, and developing forecast financial statements. Several special topics are included that deal with current trends and issues (e.g., mergers and acquisitions, physician integration, and new payment mechanisms). The course consists of lectures and case studies. As a team project, students develop a long-range financial plan for a hypothetical hospital.

Prerequisites: Graduate classification.**PHPM 625 Management Strategies and Principles for Public Health Organizations****Credits 3. 3 Lecture Hours.**

Designed to prepare for entry-level positions in public health organizations; exploration of planning, organizing, controlling, directing, staffing and decision making functions; includes discussions, in-class exercises and guest speakers pertaining to select topics.

Prerequisites: Enrollment in Master of Public Health in Health Policy Management or approval of instructor.**PHPM 629 Organizational Assessment and Development****Credits 3. 3 Lecture Hours.**

This course provides skills needed to support collaborative processes in diagnosing organizational needs and problems and introducing innovative structures, processes, and other changes to enhance organizational responsiveness and accountability.

PHPM 631 Health Information Management Systems**Credits 3. 3 Lecture Hours.**

Course introduces computer-based information systems, architectures and applications in the management of health services organizations. It addresses systems designs, data management systems, data access and communications, and the implications of expanding technological capacities for information management systems.

Prerequisite: PHPM 605 or PHPM 606.**PHPM 632 Inter-professional Health Care Ethics****Credits 2. 2 Lecture Hours.**

This proposed course is an inter-professional Health Care Ethics and Professionalism Course. It is designed to be offered to combined medicine, nursing, pharmacy and public health students at the Health Science Center. It now includes the Chaplaincy program at Scott & White Health System. Students in public health will be in combined large lecture classes and small groups with students enrolled in medicine, nursing, pharmacy and chaplaincy. Students will be exposed to a wide range of ethical, professional, and policy issues. Grading and evaluation is based on short quizzes and participation in small group discussion.

PHPM 633 Health Law and Ethics**Credits 3 to 4. 3 to 4 Lecture Hours.**

Course covers torts, contract law, corporate liability, malpractice, key federal and state regulations, and records management relative to health care. Important health case law is discussed. Ethical considerations are discussed as they relate to the law and management of health delivery systems.

Prerequisite: PHPM 605 or PHPM 606.

PHPM 637 Political Foundations of Public Health**Credits 3. 3 Lecture Hours.**

Study of how the political process works; how the political process shapes health policy; identification of key theories of political science; evaluation of how current health policy impacts subsequent political debates.

PHPM 638 Global Health Systems: Design & Analysis**Credits 3. 3 Lecture Hours.**

Global Health Systems: Design & Analysis. Comprehension of the role of international organizations, state actors and civil society in global health; application of structured theoretical framework for evaluating, designing and reforming national health systems; development and analyses of goals and metrics for health system performance; financing, payment, organization, regulation and behavioral mechanisms in different countries.

Prerequisite: Graduate classification.**PHPM 639 Global Health****Credits 3. 3 Lecture Hours.**

Globalization of health is evolving dramatically spurred on by the globalization of trade and commerce, migration of peoples, and advances in communication. These changes are having a significant impact on health and health care. Multiple diseases, as influenza, emerging in a local site but then are transmitted at a global or pandemic proportion with a few short weeks or months. International travel and the migration of populations across countries can lead to the introduction of diseases or conditions previously unheard of or noted in only small numbers.

PHPM 640 Health Policy and Politics**Credits 3 to 4. 3 to 4 Lecture Hours.**

Examination of health policy-making at the national and state levels, including the role of Congress, the Presidency, administrative agencies, and interest groups; policy formation in multiple areas with a particular focus on Medicare, Medicaid; approaches to controlling costs, improving access, and assuring quality.

Prerequisites: Graduate classification.**PHPM 641 Advanced Health Policy****Credits 3. 3 Lecture Hours.**

Examination of the process by which national health policy is made including the role of government, interest groups and the public, and how policy analysis and program evaluation can inform health policy but also be constrained by the politics of health.

PHPM 642 Public Health Emergency Preparedness Policy Issues**Credits 3. 3 Lecture Hours.**

This course examines design and implementation of public health at federal, state, and local levels. It addresses development, organization, financing, regulation, delivery and evaluation in many health policy areas. The course examines public health policy issues across the emergency preparedness continuum.

PHPM 643 Health Policy Analysis**Credits 3. 3 Lecture Hours.**

Study of problems in public health and identification of policy-based solutions to those problems; identification of policy problems, development of policy solutions, evaluation of options and implementation of changes aimed at addressing public health issues.

Prerequisites: PHPM 640; approval of instructor.**PHPM 644 Texas Training Initiative For Emergency Response (T-Tier)****Credits 3. 3 Lecture Hours.**

This course develops the knowledge, skills, and abilities needed to effectively respond to bioterrorism, infectious disease outbreaks, and other public health threats and emergencies in a multi-disciplinary approach. The course will focus on competencies paralleling the critical benchmark of emergency preparedness as identified by the Centers for Disease Control and Prevention, as well as to gain the knowledge, skills and abilities along with practice to protect the public's health. Roles of the many public health workers will be explored.

PHPM 645 Critical Issues in Health Policy**Credits 3. 3 Lecture Hours.**

Overview of how U.S. national and state health policy is formulated and considers competing interests in the political process; emphasis on the unique needs of special interest groups from the financially disadvantaged to special needs populations, ethnic and other minorities and rural populations.

Prerequisite: Graduate classification.**PHPM 646 Health Systems and the Aging****Credits 3. 3 Lecture Hours.**

Overview of the current U.S. infrastructure designed to provide health services to the aging. Includes federal and illustrative state policies that affect the health of the older citizens and the systems designed to meet their health care needs.

PHPM 647 Long-Term Care Policy and Management**Credits 3. 3 Lecture Hours.**

Examination of health policy and management in provision of care for the aged and other chronic care populations. Includes instruction on access, use, market issues, quality of services and cost containment.

Prerequisite: PHPM 605.**PHPM 648 Systematic Review and Meta-Analysis for Population Health Sciences****Credits 3. 3 Lecture Hours.**

Preparation of systematic reviews for population health sciences using meta-analysis.

PHPM 652 Health Care Reimbursement**Credits 3. 3 Lecture Hours.**

Study of reimbursement policies and practices of public and private third party payers, and self-insured employers. In addition the course presents an overview of the impact these different payers have on health providers, including incentives, quality and access to care.

Prerequisite: PHPM 605.**PHPM 653 Health Economics and Insurance****Credits 4. 4 Lecture Hours.**

Basic concepts in economic theory and analysis applied to health care delivery and financing in the United States; supply and demand issues for health services, market competition and public sector involvement; emphasis on issues of health insurance including adverse selection, moral hazard, underwriting, selective contracting, employer-sponsored health insurance, the Affordable Care Act, Medicare and Medicaid.

PHPM 654 Health Insurance and Managed Care**Credits 3. 3 Lecture Hours.**

Overview of health insurance in the U.S., with emphasis on the private health insurance markets and managed care; demand for insurance, insurance underwriting and rate making; the role of employer-sponsored health insurance; the impact of managed care on hospitals and physician markets; health savings accounts and consumer-directed plans.

Prerequisites: Graduate classification.

PHPM 655 Survey Design for Public Health Research and Practice
Credits 3. 3 Lecture Hours.

Study of how to measure phenomena in public health; discussion of how to design surveys in public health; the identification of limitations of survey research; evaluation of how survey design can be applied to answer public health questions.

PHPM 661 Introduction To Health Economics

Credits 3 to 4. 3 to 4 Lecture Hours.

Provides basic concepts in economic theory and analysis applied to health care delivery in the United States. Course addresses supply and demand issues for health services, reimbursement systems and health insurance. Course addresses issues in health delivery in a competitive market and public sector involvement.

PHPM 662 Health Economics II: Advanced Health Economics

Credits 3. 3 Lecture Hours.

This course is intended to provide a more in depth examination of the economic aspects of the supply of and demand for health and health care services.

Prerequisite: PHPM 661.

PHPM 663 Cost Effectiveness Analysis and Health Policy

Credits 3. 3 Lecture Hours.

This course provides an overview of the methods of cost-effectiveness analysis and decision analysis and their applications to resource allocation decisions in public health and medicine, particularly as it relates to health policy.

Prerequisite: PHPM 661.

PHPM 664 Foundations of Translational Research

Credits 3. 3 Lecture Hours.

This is a course in Foundations of Translational Research. The discipline of translational science provides a structure that expedites the translation of important discoveries that improve healthcare into practical applications. The course is an intense introduction to translational science and includes educational preparatory lectures and presentations by senior researchers. Topics include an introduction to types and tools of research, ethics in translational science, communication of science, research with underserved/under-represented populations, introduction to bioinformatics and health informatics, data/database management and analysis, clinical study/trial design and methodology, clinical research methods, basic statistics, an update on molecular biology and genetics, an update on basic science in translational research, protections of human subjects, animal welfare and use, and grantsmanship. Restricted to PhD program students.

PHPM 668 Applied Health Services Research I

Credit 1. 1 Other Hour.

Each step in the development and execution of a research project. Faculty in the doctoral program will discuss hypothesis development, measurement strategies, data collection option, analysis plans, research ethics and other issues that arise during a health services research project.

Prerequisite: Graduate classification.

PHPM 669 Applied Health Services Research II

Credit 1. 1 Lecture Hour.

Weekly discussion of a research paper or research papers assigned by the instructor; faculty in the doctoral program may also present their work or lead the discussion of specific papers.

Prerequisite: Graduate classification.

PHPM 670 Health Policy Evaluation

Credits 3. 3 Lecture Hours.

Comprehensive examination of approaches to evaluate health policies and programs. Includes both discussion of analytical methods and design issues.

Prerequisites: PHPM 640, STAT 651.

PHPM 671 Introduction to Health Services Research

Credits 3. 3 Lecture Hours.

Examines issues pertaining to health care access, cost and quality across multiple health care settings.

Prerequisite: PhD or MSPH students only.

PHPM 672 Data Science for Health Services Research

Credits 3. 3 Lecture Hours.

Introduces multidisciplinary approaches to conducting health services research. Course focuses on both primary and secondary data analysis for the purpose of understanding the quality and effectiveness of various health delivery systems and the policy implications for the health of citizenry. PhD students only.

Corequisite: PHPM 669.

PHPM 673 Foundations of Health Services Research

Credits 3. 3 Lecture Hours.

The class introduces doctoral students in health services research to the conceptual frameworks and research results related to three core issues in healthcare services research - the costs of care, access to care, and quality of care. The course is coordinated by a senior faculty member and faculty members provide readings and lectures on specific topics so that students are exposed to, and can explore, different aspects of costs, access, and quality.

Prerequisite: PHPM 671.

PHPM 674 Secondary Analysis of Health Data

Credits 3. 3 Lecture Hours.

Support secondary data analysis opportunities in health services research; introduction to available databases, mechanisms of access, health policy issues that can be addressed through secondary data analysis; data cleaning and analytical techniques necessary to examine key health policy issues.

Prerequisites: Graduate classification.

PHPM 675 Survey Research Methods

Credits 3. 3 Lecture Hours.

Key elements in the design and execution of population and organizational surveys.

Prerequisites: PHPM 671 and PHPM 672.

PHPM 676 Analytical Issues in Health Services Research

Credits 0 to 3. 0 to 3 Lecture Hours.

Provides an overview of analytic tools used in health services research. Primary focus is on application to non-experimental research settings. Topics include simple and multivariate regression models, dichotomous dependent variable models, polychotomous choice models, quantile regression, propensity score methods, and instrumental variables estimators.

Prerequisite: PHEB 603 or equivalent.

PHPM 677 Data Science in Public Health**Credits 3. 3 Lecture Hours.**

The primary purpose of this course is to apply data science to health data for public health applications in order to improve the three core dimensions in health care: (1) improve quality, (2) reduce costs, and (3) improve access. The course focuses on computer programming skills to turn raw data into valid information and the fundamentals of data science. For assignments, we will select a statistical package to practice the programming concepts learned.

Prerequisite: PHEB 602 or approval of instructor.**PHPM 678 Qualitative Research in Public Health****Credits 3. 3 Lecture Hours.**

Focuses on qualitative research within public health; discusses various qualitative research theories, methods of data collection and data analysis, qualitative research design, research ethics, and disseminating qualitative data.

Prerequisite: Doctoral classification.**PHPM 680 Health Systems Leadership****Credits 3 to 4. 3 to 4 Lecture Hours.**

Integration of essential content presented in health policy and management curriculum by assessing issues confronted by health service organizations leaders and employing tools acquired in prior courses to address the issues.

Prerequisites: Graduate classification; MHA program.**PHPM 681 Seminar****Credits 1 to 3. 1 to 3 Other Hours.**

Discussion and review of current practice in Health Policy and Management.

Prerequisite: Graduate classification or approval of instructor.**PHPM 684 Practicum****Credits 3. 3 Other Hours.**

Field placement experience to work closely with a departmental faculty member and appropriate field professional(s) applying skills and techniques acquired through coursework. Must be taken on a satisfactory/unsatisfactory basis only.

Prerequisite: Graduate classification.**PHPM 685 Directed Study****Credits 1 to 9. 1 to 9 Other Hours.**

Student investigation of a topic not covered by other formal courses. May be repeated for a maximum of 6 hours total credit.

Prerequisite: Approval of student's academic advisor.**PHPM 686 Directed Research****Credits 1 to 3. 1 to 3 Other Hours.**

Student research initiative not within the scope of a thesis or dissertation. May be repeated for a maximum of 6 credits.

Prerequisite: Approval of student's academic advisor.**PHPM 689 Special Topics - Health Policy and Management****Credits 1 to 4. 1 to 4 Lecture Hours.**

Revolving topics seminar in an area of specialization within the department. May be repeated for credit.

PHPM 691 Research**Credits 1 to 6. 1 to 6 Other Hours.**

Research for thesis or project. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Approval of the student's academic advisor and department head.**PHPM 791 Doctoral Capstone****Credits 1 to 9. 1 to 9 Other Hours.**

Doctoral dissertation or equivalent project(s). May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Approval of instructor.

PHYS - Physics

PHYS 601 Analytical Mechanics**Credits 3. 3 Lecture Hours.**

Hamilton approaches to dynamics; canonical transformation and variational techniques; central force and rigid body motions; the mechanics of small oscillations and continuous systems.

Prerequisites: PHYS 302 or equivalent; MATH 311 and MATH 412 or equivalents; concurrent registration in PHYS 615.**PHYS 603 Electromagnetic Theory****Credits 3. 3 Lecture Hours.**

Boundary-value problems in electrostatics; basic magnetostatics; multipoles; elementary treatment of ponderable media; Maxwell's equations for time-varying fields; energy and momentum of electromagnetic field; Poynting's theorem; gauge transformations.

Prerequisites: PHYS 304 or equivalents; PHYS 615.**PHYS 606 Quantum Mechanics****Credits 3. 3 Lecture Hours.**

Schrodinger wave equation, bound states of simple systems, collision theory, representation and expansion theory, matrix formulation, perturbation theory.

Prerequisites: PHYS 412 or equivalent; MATH 311 and MATH 412 or equivalents; concurrent registration in PHYS 615.**PHYS 607 Statistical Mechanics****Credits 3. 3 Lecture Hours.**

Classical statistical mechanics, Maxwell-Boltzmann distribution, and equipartition theorem; quantum statistical mechanics, Bose-Einstein distribution and Fermi-Dirac distribution; applications such as polyatomic gases, blackbody radiation, free electron model for metals, Debye model of vibrations in solids, ideal quantum mechanical gases and Bose-Einstein condensation; if time permits, phase transitions and nonequilibrium statistical mechanics.

Prerequisites: PHYS 408 and PHYS 412 or equivalents; PHYS 615.**PHYS 611 Electromagnetic Theory****Credits 3. 3 Lecture Hours.**

Continuation of PHYS 603. Propagation, reflection and refraction of electromagnetic waves; wave guides and cavities; interference and diffraction; simple radiating systems; dynamics of relativistic particles and fields; radiation by moving charges.

Prerequisite: PHYS 603.**PHYS 615 Methods of Theoretical Physics I****Credits 3. 3 Lecture Hours.**

Orthogonal eigenfunctions with operator and matrix methods applied to solutions of the differential and integral equations of mathematical physics; contour integration, asymptotic expansions of Fourier transforms, the method of stationary phase and generalized functions applied to problems in quantum mechanics.

Prerequisites: MATH 311, MATH 407 and MATH 412 or equivalents.

PHYS 616 Methods of Theoretical Physics II**Credits 3. 3 Lecture Hours.**

Group theory and its implementation in physical systems; finite groups, Lie groups and Lie algebras; representation theory, symmetries of regular objects, global aspects of Lie groups and classification of Lie algebras.

Prerequisites: PHYS 615 or approval of instructor.

PHYS 617 Physics of the Solid State**Credits 3. 3 Lecture Hours.**

Crystalline structure and symmetry operations; electronic properties in the free electron model with band effects included; lattice vibrations and phonons; thermal properties; additional topics selected by the instructor from: scattering of X-rays, electrons, and neutrons, electrical and thermal transport, magnetism, superconductivity, defects, semiconductor devices, dielectrics, optical properties.

Prerequisites: PHYS 606 and PHYS 607.

PHYS 619 Modern Computational Physics**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Modern computational methods with emphasis on simulation such as molecular dynamics and Monte Carlo; applications to condensed matter and nuclear many-body physics and to lattice gauge theories.

Prerequisites: PHYS 408 and PHYS 412 or equivalents; knowledge of any programming language.

PHYS 624 Quantum Mechanics**Credits 3. 3 Lecture Hours.**

Continuation of PHYS 606. Scattering theory, second quantization, angular momentum theory, approximation methods, application to atomic and nuclear systems, semi-classical radiation theory.

Prerequisite: PHYS 606.

PHYS 625 Nuclear Physics**Credits 3. 3 Lecture Hours.**

Nuclear models, nuclear spectroscopy, nuclear reactions, electromagnetic properties of nuclei; topics of current interest.

Prerequisite: PHYS 606.

PHYS 627 Elementary Particle Physics**Credits 3. 3 Lecture Hours.**

Fundamentals of elementary particle physics; particle classification, symmetry principles, relativistic kinematics and quark models; basics of strong, electromagnetic and weak interactions.

Prerequisite: PHYS 606.

PHYS 631 Quantum Theory of Solids**Credits 3. 3 Lecture Hours.**

Second quantization, and topics such as plasmons; many-body effects for electrons; electron-phonon interaction; magnetism and magnons; other elementary excitations in solids; BCS theory of superconductivity; interactions of radiation with matter; transport theory in solids.

Prerequisites: PHYS 617 and PHYS 624.

PHYS 632 Condensed Matter Theory**Credits 3. 3 Lecture Hours.**

Continuation of PHYS 631. Recent topics in condensed matter theory. Peierl's Instability, Metal-Insulator transition in one-dimensional conductors, solitons, fractionally charged excitations, topological excitations, Normal and Anomalous Quantum Hall Effect, Fractional Statistics, Anyons, Theory of High Temperature Superconductors, Deterministic Chaos.

Prerequisites: PHYS 601, PHYS 617 and PHYS 624.

PHYS 634 Relativistic Quantum Field Theory**Credits 3. 3 Lecture Hours.**

Classical scalar, vector and Dirac fields; second quantization; scattering matrix and perturbation theory; dispersion relations; renormalization.

Prerequisite: PHYS 624.

PHYS 638 Quantum Field Theory II**Credits 3. 3 Lecture Hours.**

Functional integrals; divergences, regularization and renormalization; non-abelian gauge theories; other topics of current interest.

Prerequisite: PHYS 634.

PHYS 639 Methods of Experimental Particle Physics**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Methods of particle detection and data analysis techniques in experimental particle physics; computational and statistical methods in modern research; next challenges in experimental particle physics; use of statistical and computational techniques, Monte Carlo simulation methods, presenting and documenting scientific findings using LaTeX.

Prerequisites: PHYS 305 and PHYS 412; working knowledge of C or C++; or approval of instructor.

PHYS 641/ASTR 601 Extragalactic Astronomy**Credits 3. 3 Lecture Hours.**

Overview of observations of galaxies and large-scale structures in the Universe to understand their formation and evolution from theoretical and observational perspectives; galaxy luminosity functions; evolution of stellar populations and chemical enrichment; clusters and AGN.

Prerequisites: PHYS 601; or ASTR 314 and PHYS 302; or approval of instructor.

Cross Listing: ASTR 601/PHYS 641.

PHYS 642/ASTR 602 Astronomical Observing Techniques and Instrumentation**Credits 3. 3 Lecture Hours.**

Theory and practice of obtaining and analyzing astrometric, photometric, spectroscopic, and interferometric measurements of astronomical sources across the electromagnetic spectrum; principles of design, fabrication, assembly, test, deployment, and use of astronomical instruments.

Prerequisites: PHYS 615 or equivalent; or approval of instructor.

Cross Listing: ASTR 602/PHYS 642.

PHYS 643/ASTR 603 Stellar Astrophysics**Credits 3. 3 Lecture Hours.**

Theoretical and observational aspects of stellar astrophysics; thermodynamic properties of stellar interiors; energy sources; nuclear processes and burning stages; convective and radiative energy transport; evolutionary models; atmospheres; stability and pulsations; chemical enrichment processes; population synthesis.

Prerequisites: PHYS 606 and PHYS 607 or equivalents; or approval of instructor.

Cross Listing: ASTR 603/PHYS 643.

PHYS 644/ASTR 604 Cosmology**Credits 3. 3 Lecture Hours.**

Basic principles of modern cosmology and particle physics; general relativity; cosmic inflation; Big Bang nucleosynthesis; expansion of the universe; cosmic microwave background; large-scale structure of the Universe; properties of particles; dark matter; dark energy.

Prerequisites: PHYS 615 or equivalent; or approval of instructor.

Cross Listing: ASTR 604/PHYS 644.

PHYS 645/ASTR 605 Galactic Astronomy**Credits 3. 3 Lecture Hours.**

Basic nature and structure of constituents of Milky Way galaxy; distribution and motions of stars and gas; origin evolution and distribution of large-scale chemical abundances and kinematic patterns across populations; models of galaxy formation and implications of modern observations.

Prerequisites: PHYS 601 and PHYS 607 or equivalents; or approval of instructor.

Cross Listing: ASTR 605/PHYS 645.

PHYS 646/ASTR 606 Radiative Transfer**Credits 3. 3 Lecture Hours.**

Fundamental radiative processes in stellar and planetary atmospheres; radiative fields; Stokes parameters; Mueller matrix formalism; radiation from moving charges; Compton scattering; plasma effects; atomic structure and radiative transitions; molecular structure and spectra; multiple scattering.

Prerequisites: PHYS 302, PHYS 304, PHYS 408, and PHYS 412 or equivalents; or approval of instructor.

Cross Listing: ASTR 606/PHYS 646.

PHYS 647 Gravitational Physics**Credits 3. 3 Lecture Hours.**

Special relativity; equivalence principle; theory of gravitation; Einstein's theory of general relativity; classic tests of general relativity; simple black hole and cosmological solutions; global aspects; penrose diagrams; stationary black holes; Hawking radiation.

Prerequisites: PHYS 611 and PHYS 615.

PHYS 648 Quantum Optics and Laser Physics**Credits 3. 3 Lecture Hours.**

Line widths of spectral lines; laser spectroscopy; optical cooling; trapping of atoms and ions; coherence; pico- and femto-second spectroscopy; spectroscopic instrumentation.

Prerequisite: Approval of instructor.

PHYS 649 Physics of Optoelectronic Devices**Credits 3. 3 Lecture Hours.**

Overview of basic concepts: laser physics, optics of semiconductors, heterostructures with quantum confinement and their interaction with light; physical principles of state of the art optoelectronic devices; emerging concepts and technologies: integrated photonics, nanophotonics, plasmonics, metamaterials, terahertz optoelectronics, quantum information processing, etc.

Prerequisites: Quantum mechanics (PHYS 412 and PHYS 414 or PHYS 606 or equivalent).

PHYS 651 Superstring Theory I**Credits 3. 3 Lecture Hours.**

Basics of string theory, including bosonic string, conformal field theory, strings with worldsheet and space-time supersymmetry, as well as the higher dimensional extended objects called D-branes.

Prerequisites: PHYS 634 and PHYS 653; PHYS 647 recommended.

PHYS 652 Superstring Theory II**Credits 3. 3 Lecture Hours.**

M-theory unification of superstring theories into a single eleven-dimensional theory; duality symmetries relating string theories; string geometry; Calabi-Yau manifolds and exceptional holonomy manifolds; flux compactifications; black holes in string theory; AdS/CFT correspondence; string and M-theory cosmology.

Prerequisites: PHYS 651; PHYS 647 recommended.

PHYS 653 Introduction to Supersymmetry and Supergravity**Credits 3. 3 Lecture Hours.**

Core material on supersymmetric field theories and their coupling to supergravity theories.

Prerequisite: PHYS 634.

PHYS 654 The Standard Model and Beyond**Credits 3. 3 Lecture Hours.**

The standard model of particle physics in detail; general principles of gauge theories, including spontaneous breaking and applications to Electro-Weak Interactions and Quantum Chromodynamics; extension of the standard model involving Grand Unified Theories (GUT), Supersymmetry (SUSY) and Supergravity (SUGRA).

Prerequisites: PHYS 624 and PHYS 634.

PHYS 655 String Phenomenology**Credits 3. 3 Lecture Hours.**

Physical applications of string theory; rudiments of string theory; compactification of extreme dimensions in string theory; free-fermionic formulation; dualities, M-theory, intersection D-Branes, and D-Brane phenomenology; model building.

Prerequisites: PHYS 634 and PHYS 651.

PHYS 661 Superfluidity and Superconductivity**Credits 3. 3 Lecture Hours.**

Basic properties of superconductors, superfluid 4He and superfluid 3He; Bose Einstein condensation, BCS theory and Ginzburg-Landau theory; methods of achieving low temperatures, with lab tours. Special topics include broken symmetry, neutron stars, ultra-cold atomic gases and tunneling in superconductors.

Prerequisite: PHYS 408, PHYS 412, and PHYS 414, or equivalents.

PHYS 666 Scientific Instrument Making**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Theory and techniques for designing and constructing advanced scientific instruments such as spectrometers, cryostats, vacuum systems, etc.; mechanical and electronic shop procedures utilizing the lathe and mill; welding and soldering; drafting and print reading; circuit design.

Prerequisite: Approval of instructor.

PHYS 671 Ultrafast Laser Physics**Credits 3. 3 Lecture Hours.**

Ultrafast optics; nonlinear optics; laser physics; active and passive mode-locking; pulse characterization and shaping; applications in industry and research such as time-resolved spectroscopy, coherent control, terahertz spectroscopy, and high-order harmonic generation.

Prerequisites: PHYS 204, PHYS 205, PHYS 221 and PHYS 412, or equivalents.

PHYS 674/ECEN 674 Introduction to Quantum Computing**Credits 3. 3 Lecture Hours.**

Introduces the quantum mechanics, quantum gates, quantum circuits and quantum hardware of potential quantum computers; algorithms, potential uses, complexity classes, and evaluation of coherence of these devices.

Prerequisites: MATH 304; PHYS 208.

Cross Listing: ECEN 674/PHYS 674.

PHYS 681 Seminar**Credit 1. 1 Lecture Hour.**

Subjects of current importance; normally required of all graduate students in physics.

PHYS 685 Directed Studies**Credits 1 to 9. 1 to 9 Other Hours.**

Individual problems not related to thesis.

Prerequisite: Approval of instructor.**PHYS 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of physics. May be repeated for credit.

Prerequisite: Approval of instructor.**PHYS 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research toward thesis or dissertation.

Prerequisite: Baccalaureate degree in physics or equivalent.

PLAN - Urban Planning

PLAN 601 Introduction to Planning**Credit 1. 1 Lecture Hour.**

Will give an overview of the field of planning, the main areas of concentration/employment within the field, the faculty, their areas of expertise, etc.

Prerequisite: All MUP students in their first semester.**PLAN 604 Planning Methods I****Credits 3. 3 Lecture Hours.**

Fundamental concepts and methods used in urban and regional research; qualitative and quantitative research designs; measurement and scaling; sampling; data collection; data file construction; introduction to data analysis and statistical inference.

Prerequisite: Graduate classification.**PLAN 610 Structure and Function of Urban Settlements****Credits 3. 3 Lecture Hours.**

The study of urbanization and how geographic, economic, sociological and political factors give rise to changes in the structure and functions of cities; how the movement of people, products, services and capital create unique urban patterns of land use and infrastructure with implications for long-term livability and sustainability.

Prerequisites: Graduate classification.**PLAN 612 Transportation in City Planning****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Influence of transportation in shaping urban form; relationships between land use and transportation; conceptual layout of street systems; trends in urban development, site development, circulation and relationships to the street system; guidelines for the redevelopment of existing streets and the adjacent land.

PLAN 613 Planning Methods and Techniques**Credits 3. 3 Lecture Hours.**

Methods and techniques of research, data collection and analysis; coordination of planning process with public policy and plan implementation.

PLAN 616 Analyzing Risk/Hazard and Public Policy**Credits 3. 3 Lecture Hours.**

Evaluation and development of risk analysis, including risk assessment, perception of risk, risk communication and risk management; the mitigation of risk, involving technology, emergency management, disaster preparedness; emphasizes the relationship with risk analysis in public policy, participation, emergency preparedness, hazard mitigation and the management of risk.

Prerequisite: Graduate classification.**PLAN 622/LAND 622 Critical Place Studies: Theory, Research and Practice****Credits 3. 3 Lecture Hours.**

Introduction to historic preservation regulations; ethnographic and archival research methods, cultural landscape identification and documentations strategies, and critical theories; application of digital humanities tools and platforms to preservation practice and outreach to communities.

Cross Listing: LAND 622/PLAN 622.**PLAN 623 Development Planning in Third World Countries****Credits 3. 3 Lecture Hours.**

Examines historical, political, economic, social and cultural dimensions of "Third World" development problems; application of planning methods and techniques toward long-term solutions in the context of unfolding contemporary world events; considers the role of international lending institutions, technical assistance and funding requirements in developing countries.

PLAN 624 Digital Communication in Landscape Architecture and Urban Planning**Credits 3. 2 Lecture Hours. 4 Lab Hours.**

Learn, develop, and apply fundamental knowledge and skills throughout the process of environmental design and planning; base map preparing, site plan designing, cross-section drawing, 2-dimensional plan rendering, 3-dimensional model rendering and poster presentation.

PLAN 625 Geographical Information Systems in Landscape and Urban Planning**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Provides an understanding of GIS fundamentals; basic concepts, principles and functions; essential skills for applying GIS in various fields such as urban planning, landscape architecture, land development, environment studies, transportation and hazard management; based on learning through class projects.

Prerequisite: Graduate classification.**PLAN 626 Advanced GIS in Landscape Architecture and Urban Planning****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Continuation of GIS in Landscape Architecture and Urban Planning PLAN 625; topics include advanced spatial analysis technology; emphasis on urban planning, landscape architecture, land development, hazard management and related applications to issues.

Prerequisite: PLAN 625.**PLAN 627 Economic Development****Credits 3. 3 Lecture Hours.**

Examines the strategies employed in the pursuit of local economic development. Discusses basic principals for critically assessing alternative development policies and programs; reflects on the goals and objectives of economic development efforts; and identifies tools for structure and financing local projects.

PLAN 629 Neighborhood Revitalization**Credits 3. 3 Lecture Hours.**

Addresses the social, political and economic theory of neighborhoods-their growth, function and design; an understanding of how neighborhoods experience change, as well as the consequences of this change for residents.

PLAN 630 Survey of Health Planning Processes**Credits 3. 3 Lecture Hours.**

Considers evolution and development of the health care system in the U.S. and how hospitals and other health service institutions go about developing strategic planning systems.

PLAN 631 Health Systems Planning and Policy**Credits 3. 3 Lecture Hours.**

Specific health planning issues; distribution of manpower and facilities, financial resources, local-federal partnership, system's organization and governance.

PLAN 632 Design for Active Living**Credits 3. 3 Lecture Hours. 0 Lab Hours.**

Understanding the forms and characteristics of the built environment and the influence on human behaviors, lifestyles and health; theoretical and empirical insights into the issues of physical activity, obesity, and automobile dependency; focus on how changes in the built environment help address these issues.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: ARCH 673 and LAND 632.

PLAN 633 Planning for Healthy Communities**Credits 3. 3 Lecture Hours.**

An introduction to issues involved in planning healthy cities/communities; by exploring experiences initiated by the World Health Organization and subsequent international experiences, attention is given to the healthy cities/communities movement in the United States and the case studies of programs at local, state and national levels.

PLAN 634 Environmental Health Policy and Planning**Credits 3. 3 Lecture Hours.**

Interdisciplinary perspective of environmental risk analysis methods and policy implications; federal and state agencies and programs involved in developing and implementing environmental health policies and monitoring environmental health hazards; historical and economic context of environmental health legislation; framework for policy making process and criteria to determine effectiveness and outcomes.

Prerequisite: Graduate classification.

PLAN 635/LAND 635 Concepts in Ecological Planning and Design**Credits 3. 3 Lecture Hours.**

Reviews selected ecological concepts and explores integration into ecological/landscape planning, design using a historical perspective; historical and contemporary approach to provide and in-depth understanding of how they can better mediate between human actions and natural process.

Prerequisite: Graduate classification.

Cross Listing: LAND 635/PLAN 635.

PLAN 640 Law and Legislation Related to Planning**Credits 3. 3 Lecture Hours.**

Legislative process and planning legislation; enabling legislation and legal tools of planner: zoning, subdivision ordinances, eminent domain, extraterritorial jurisdiction and other related planning instruments.

PLAN 641 Problems of Environmental Planning Administration**Credits 3. 3 Lecture Hours.**

State and federal legislation pertaining to environmental consumer protective aspects of urban planning; review of administrative procedures; major judicial decisions; also taught at Galveston campus.

PLAN 642 Planning for Coastal Sustainability and Resiliency**Credits 3. 3 Lecture Hours.**

Principles of resiliency and sustainability in coastal areas; examination of issues from ecological, social, economic, organizational, planning and built-environment perspectives; application of principles to realistic problems, settings and solutions.

Prerequisite: Graduate classification; also taught at Galveston campus.

PLAN 647 Disaster Recovery and Hazard Mitigation**Credits 3. 3 Lecture Hours.**

Interdisciplinary study of the impacts of environmental disasters; describes process of disaster recovery and examines methods of reducing future vulnerability; analyzes regulation, market mechanisms, and public education as methods for implementing mitigation measures.

Prerequisite: Graduate classification.

PLAN 649 Organizational and Community Response to Crises and Disasters**Credits 3. 3 Lecture Hours.**

Introduction to the study of organized and community planning and response to natural and technological disasters and social crisis; focus upon emergency preparedness and response; practical issues, planning for emergency management and existing research literature of basic disaster at the organization and community levels.

Prerequisite: Graduate classification.

PLAN 650 Disaster Response Planning**Credits 3. 3 Lecture Hours.**

Mitigation, preparedness, response and recovery strategies; roles of the Federal Emergency Management Agency, the Governor's Division of Emergency Management, the National Weather Service and the American Red Cross.

PLAN 654 Planning Administration and Management**Credit 1. 1 Lecture Hour.**

Issues of professional practice in public and private sectors.

PLAN 656 Housing and Community**Credits 3. 3 Lecture Hours.**

Housing, its development, planning, marketing, designing, financing, and production; social and design history and contemporary issues of American housing development, urban renewal, neighborhood structure and community facilities.

PLAN 658 Plan Implementation**Credits 3. 3 Lecture Hours.**

Techniques of implementing major urban development programs and plans; capital improvements programming and budgeting; overview of regulatory measures including zoning and subdivision regulations; public involvement process; and fiscal planning.

PLAN 661 Information and Communication in Planning**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Types and sources of planning related information; use of verbal, printed and electronic media in communicating planning information and formulating alternative solutions to community development problems.

PLAN 662 Applied Planning I**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Acquisition, analysis, and management of information pertaining to urban and regional planning in a case specific scenario; issue analysis; formulation of goals and objectives, and policies; consensus building; includes all tasks leading up to the preparation of an urban, regional or strategic plan.

PLAN 663 Applied Planning II**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Preparation of a major plan or planning document for a specific subject associated with the field of urban and regional planning including the environment; land use; urban design; transportation systems; housing and community facilities; infrastructure systems; growth management systems; urban image; and other topics.

Prerequisite: PLAN 662 or approval of instructor.

PLAN 664 Planning Theory and History**Credits 3. 3 Lecture Hours.**

A critical examination of the justifications for and major alternative approaches to planning in the public domain, beginning with the fundamental historical intentions of and projects in city planning within industrial societies and tracing the subsequent development of planning as political reform, political analysis, social mobilization and other modern variants.

PLAN 665 Plan Making**Credits 3. 3 Lecture Hours.**

Introduction to a wide variety of styles and methodologies employed by the urban and regional planner; planning styles reviewed include: comprehensive land use planning; policies planning; strategic planning; regional planning; and private sector corporate planning. Emphasis is given to the actual review and content analysis of plans.

PLAN 667 Site Planning**Credits 3. 2 Lecture Hours. 4 Lab Hours.**

Introduction to physical planning and design aspects of city planning; the relationship between urban design and city/regional planning; the history of design paradigm; essential tools and applications for physical planning; and site planning and design of physical attributes.

PLAN 669 Urban Infrastructure Planning**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Identification of urban infrastructure requirements; criteria for utility location and design; projection of the conversion of land to urban uses; estimating demand for urban services; anticipating the effect of urbanization on storm runoff; and municipal practice in financing infrastructure extensions.

PLAN 670 Urban Public Transportation Planning**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Planning, operations, fiscal, management and legal aspects of urban, rural and regional public transportation modes; preparation of transportation systems program elements.

PLAN 673 Design for Sustainable Transportation**Credits 3. 3 Lecture Hours.**

Introduce planning and design principles, techniques, and examples for achieving sustainable transportation; transit-oriented development, neo-traditional design, traffic calming, non-motorized travel, and smart growth; car sharing, parking pricing, location efficient mortgage, and alternative vehicles and fuel technologies.

Prerequisite: Graduate classification.**PLAN 674 Transportation System Analysis****Credits 3. 3 Lecture Hours.**

Introduces basic concepts and techniques of modeling, analyzing and solving problems in transportation systems planning, operations, management and design within a unified framework for transportation systems analysis; includes: disaggregate demand theory and application, activity analysis and land use forecasting, network optimization stochastic processes, queuing models and simulation.

Prerequisite: CVEN 672 or approval of instructor.**PLAN 675 Theory of Planning and Urbanism****Credits 3. 3 Lecture Hours.**

Theories of planning and urbanization in world literature; physical community design as expression of ideology and cultural value systems.

PLAN 676 Transportation Investment Decisions**Credits 3. 3 Lecture Hours.**

The course provides the graduate-level student with an overview of the elements of transportation investment decisions including transportation supply, demand, finance, and economic impact.

PLAN 678 Applied Transportation Studio: Site Planning and Traffic Impact**Credits 3. 3 Lecture Hours.**

Practical overview of urban planning and transportation topics including transportation-land use, functional classification, thoroughfare and land use planning, site planning, traffic impact analysis, access management and site design.

Prerequisite: Approval of instructor.**PLAN 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussions of current research and selected topics in urban and regional planning.

Prerequisite: Approval of instructor.**PLAN 684 Professional Internship****Credits 1 to 8. 1 to 8 Other Hours.**

Professional practice under approved arrangement with public or private agencies.

PLAN 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Individual and group problems dealing with application of planning theory and practice. Opportunities to select foreign and domestic planning project of special interest.

PLAN 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of urban and regional planning. May be repeated for credit.

PLAN 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

PLAN 693 Professional Study**Credits 1 to 6. 1-1 Other Hours.**

Approved professional study project undertaken as the terminal requirement for the Master of Urban Planning degree; preparation of a record of study summarizing rationale, procedure and results of the completed activity.

Prerequisite: Approval of committee chair.

PLPA - Plant Pathology

PLPA 601 Fundamentals of Plant Pathology**Credits 3. 3 Lecture Hours.**

Increase the understanding of the underlying mechanisms in the disease process; apply that understanding to reduce losses caused by disease; nature of disease causing agents; the outcomes of the interaction between plants and pathogens.

Prerequisite: Graduate classification.

PLPA 603 Plant Disease Management**Credits 3. 3 Lecture Hours.**

Online course designed to provide a strong foundation in the principles and practices of management of plant diseases; analysis of disease cycles and epidemiological parameters to develop and evaluate efficient control strategies and forecasting models.

Prerequisites: PLPA 301, or PLPA 601, or equivalent, approval of instructor.

PLPA 604 Plant Bacterial Diseases**Credit 1. 1 Lecture Hour.**

Bacterial diseases of fruit and vegetable crops, field crops and ornamental plants; structure and function of plant pathogenic bacteria; dissemination of bacterial pathogens and methods of control.

Prerequisite: PLPA 301 or PLPA 601.

PLPA 605 Molecular Plant Virology**Credit 1. 1 Lecture Hour.**

Focus on biology and molecular genetics of plant viruses; historical information and recent developments discussed to illustrate how viruses establish an infection; control measures presented; uses as tools in biotechnology.

Prerequisite: PLPA 301 or PLPA 601.

PLPA 606 Fungal Biology**Credit 1. 1 Lecture Hour.**

Morphological and molecular systematic survey of kingdom of Fungi; emphasis on modern concepts and disease control.

Prerequisite: PLPA 301 or PLPA 601.

PLPA 607 Pathogen Strategies**Credit 1. 1 Lecture Hour.**

Molecular mechanisms that pathogens use to overcome innate immunity of the host plant; molecular events associated with the disease cycles of pathogens; pathogen-host-coevolution; pathogen virulence factors; pathogen countermeasures to plant defense mechanisms.

Prerequisites: PLPA 301 or PLPA 601.

PLPA 608 Pathogen Perception and Signaling**Credit 1. 1 Lecture Hour.**

Molecular and biochemical basis of pathogen recognition; pathogen signaling initiation and transduction in hosts.

Prerequisite: PLPA 301 or PLPA 601.

PLPA 609 Defense Hormone Signals**Credit 1. 1 Lecture Hour.**

Molecular and biochemical mechanisms of plant hormone-mediated defense responses to pathogen invasion; major classes of defense-related proteins, phytoalexins and antibacterial secondary metabolites and signal transduction pathways.

Prerequisite: PLPA 301 or PLPA 601.

PLPA 610 Host Plant Resistance**Credits 3. 3 Lecture Hours.**

Host plant resistance programs from the standpoint of the plant breeder, plant pathologist and entomologist; team taught with each discipline represented; roundtable discussion of assigned readings and lectures.

Prerequisite: Approval of instructor.

Cross Listing: SCSC 610 and ENTO 610.

PLPA 611 Advanced Plant Pathology**Credits 3. 3 Lecture Hours.**

Principles and concepts of plant pathogenesis, plant disease epidemiology, and plant disease management at the level of the whole plant and in plant populations; impact and control of significant plant diseases.

Prerequisites: PLPA 301 or equivalent; approval of instructor.

PLPA 613 Advanced Plant Pathology Laboratory**Credit 1. 3 Lab Hours.**

A laboratory course designed to demonstrate key components of the host-pathogen interaction and modern diagnostic and research techniques. Concurrent enrollment in PLPA 611 recommended.

Prerequisite: PLPA 301 or approval of instructor.

PLPA 614 Pathogens, the Environment, and Society**Credits 3. 3 Lecture Hours.**

Survey the impact of microorganisms on development of modern culture and society; emphasize role pathogens have played in history of mankind; influence of changing environment on emerging diseases.

Prerequisite: Graduate classification.

PLPA 616 Methods in Molecular Biology of Plant-Microbe Interactions**Credits 2. 2 Lecture Hours.**

Concepts and techniques used in molecular plant pathology to study the interactions between hosts and pathogens; focus on understanding the rationale for implementing certain procedures and the theoretical concepts underlying the methodology.

Prerequisite: Graduate classification.

PLPA 617 Molecular Plant Pathogen Interactions**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Critical review of the current literature on molecular and biochemical mechanisms of plant responses to pathogen invasion; overview of disease resistance genes, major classes of defense-related proteins, antimicrobial compounds and signal-transduction pathways.

Prerequisite: Graduate classification in any life sciences departments.

PLPA 618 Bacterial Plant Diseases**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Bacterial diseases of fruit and vegetable crops, field crops and ornamental plants; nature of the disease, dissemination of the pathogen and methods of control.

Prerequisite: Approval of instructor.

PLPA 619 Plant-Associated Microorganisms**Credits 3. 3 Lecture Hours.**

Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improved plant health and sustainable agriculture; microbial roles in food safety and future challenges; discussion of current literature.

Prerequisites: Basic plant biology or plant ecology is recommended; microbiology is helpful, but not required. Cross listed with HORT 619 and MEPS 619.

PLPA 620 Plant Virology**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Overview of plant virology with emphasis on molecular biology of host-virus interactions; topics will include virus replication, gene expression, movement, symptoms, transmission and control; current literature and techniques important to virology presented.

Prerequisite: Approval of instructor.

PLPA 623 Diseases of Field Crops**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Fundamental and practical aspects of more important and representative diseases of field crops; plant disease problems peculiar to extensive cultivation methods.

Prerequisites: PLPA 301 and PLPA 303.**PLPA 626 Diagnosis of Plant Diseases****Credits 2. 1 Lecture Hour. 3 Lab Hours.**

Techniques employed in field diagnosis of plant diseases; histological and microbiological studies to verify initial diagnosis.

Prerequisite: PLPA 625 or approval of instructor.**PLPA 630 Fungi: Physiology and Genetics****Credits 2. 2 Lecture Hours.**

Exploration of genetic networks, and genome evolution; physiology of fungal development and plant pathogenesis.

Prerequisites: Graduate classification or approval of instructor and concurrent enrollment in PLPA 631.**PLPA 631 Fungi Laboratory****Credit 1. 3 Lab Hours.**

Demonstration of key modern concepts in the Kingdom Fungi; experiments with current research methodologies using fungi.

Prerequisites: Graduate classification or approval of instructor and concurrent enrollment in PLPA 630 and/or PLPA 632.**PLPA 632 Fungi Cell Biology and Taxonomy****Credits 2. 2 Lecture Hours.**

Fungi: Cell Biology and Taxonomy. Morphological and molecular phylogenetic survey of the Kingdom Fungi; cell biology of fungal form and function.

Prerequisites: Graduate classification or approval of instructor and concurrent enrollment in PLPA 631.**PLPA 634 Turfgrass Pathology****Credits 3. 3 Lecture Hours.**

Recognizing turfgrass problems and understanding biological mechanisms in the disease process; principles of disease management strategies.

PLPA 657 Biotechnology for Biofuels and Bioproducts**Credits 3. 3 Lecture Hours.**

Biotechnology issues in developing bioenergy as a renewable energy source; emphasis on the three generations of bioenergy and enabling technologies; special topics include recent advances in bioenergy research, government policy, and industrial development.

Prerequisite: Graduate classification.**PLPA 665 Viral Vectors and Gene Therapy****Credits 3. 3 Lecture Hours.**

Describes various viral vector systems, their development, their use as research tools, and their use in biotechnology and gene therapy; consists of a mixture of short lectures and discussion of papers from the literature.

Prerequisites: VTMI 663/MPIM 663, VTMI 647, PLPA 616, or PLPA 620 or approval of instructor.**Cross Listing:** MPIM 665 and VTMI 665.**PLPA 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussions of topics of current interest in plant pathology; review of literature on selected subjects.

PLPA 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Work-study program for on-the-job training. The student's major professor and job training supervisor will grade the individual.

Prerequisite: Graduate classification in Department of Plant Pathology and Microbiology.**PLPA 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Individual problems or research not pertaining to thesis or dissertation.

Prerequisites: PLPA 301 and PLPA 303; approval of instructor.**PLPA 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Special topics in an identified area of plant pathology. May be repeated for credit.

Prerequisite: Approval of instructor.**PLPA 690 Theory of Research****Credit 1. 1 Lecture Hour.**

Design and development of research theory, inquiry and methodology in various subfields of plant pathology and microbiology; includes examination of modern trends and advances, the analysis of research approaches, and the evaluation and interpretation of data using examples from current research literature. May be repeated for credit.

Prerequisite: Approval of instructor.**PLPA 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Original investigations in support of thesis or dissertation.

POLS - Political Science

POLS 601 Components of Political Inquiry**Credits 3. 3 Lecture Hours.**

Elements of empirical research design, techniques of data collection and data analysis. The evolution of political science as a scientific discipline. Required for political science majors.

Prerequisite: Completion of or concurrent enrollment in STAT 303 or equivalent.**POLS 602 Quantitative Political Analysis****Credits 3. 3 Lecture Hours.**

Theory, techniques and applications of quantitative analysis in political science. Required for political science majors.

Prerequisite: POLS 601 or equivalent.**POLS 603 Quantitative Political Analysis II****Credits 3. 3 Lecture Hours.**

Introduction to advanced applications of quantitative analysis in political science; critical evaluation of the use of several advanced statistical techniques in political analysis.

Prerequisite: POLS 602 or equivalent.**POLS 604 Conceptualization and Theory in Political Analysis****Credits 3. 3 Lecture Hours.**

Exploration of the function of general theoretical assumptions in social scientific research and a critical analysis of some of the most influential general conceptualizations of political phenomena.

Prerequisite: POLS 601 or equivalent.

POLS 606 Advanced Research Methods for Political Scientists**Credits 3. 3 Lecture Hours.**

Advanced techniques for specialized problems in empirical political analysis, including voter choice models, longitudinal data, elite interviewing, problems of formal theory and others. May be taken three times.

Prerequisites: POLS 601 and POLS 602 or equivalents.**POLS 607 Advanced Research Methods for Political Scientists II****Credits 3. 3 Lecture Hours.**

Advanced techniques for specialized problems in empirical political analysis, including voter choice models, longitudinal data, elite interviewing, problems of formal theory and others. May be taken up to three times as content varies.

Prerequisites: POLS 601 and POLS 602.**POLS 611 Seminar in Political Behavior****Credits 3. 3 Other Hours.**

Examination of forms of mass political behavior and the analytical frameworks used to understand them relevant to all subfields of political science; includes public opinion, vote choice, turnout, campaign contributions and participation in social movements and/or insurgencies.

POLS 612 Seminar in Political Institutions**Credits 3. 3 Other Hours.**

Examination of the design and consequences of political institutions; preference aggregation; externalities; collective action; principal-agent problems; commitment problems.

POLS 620 Comparative Political Systems**Credits 3. 3 Lecture Hours.**

Comparative study of national political systems; cross-national relationships and comparative analysis.

POLS 621 Theory and Method in Comparative Politics**Credits 3. 3 Lecture Hours.**

Introduction to methods for conducting research in comparative politics, including approaches to theory development and overcoming obstacles to comparative politics research.

Prerequisites: Graduate classification or approval of instructor.**POLS 623 Seminar in Cross-National Topics****Credits 3. 3 Lecture Hours.**

Cross-cultural investigation of the manner in which selected political processes manifest themselves in various political systems. May be taken for credit up to three times as content varies.

POLS 624 Seminar in Regional Studies**Credits 3. 3 Lecture Hours.**

Political behavior or institutions within a specified country, region or cultural area. May be taken for credit up to three times as content varies.

POLS 625 Seminar in Comparative Race and Ethnic Politics**Credits 3. 3 Other Hours.**

Significant themes in comparative study of race and ethnic politics; includes racial and ethnic identities, government and diversity, racial and ethnic violence, managing conflict. May be taken three times for credit.

Prerequisite: Graduate classification.**POLS 626 Comparative Political Institutions****Credits 3. 3 Lecture Hours.**

Comparative study of political institutions in different areas of the world; includes form of government, elections, executives, legislatures, judiciaries; current theoretical and empirical debates in comparative politics about the outcomes produced by institutions.

Prerequisites: POLS 601 and POLS 602, or approval of instructor.**POLS 627 Comparative Political Economy****Credits 3. 3 Lecture Hours.**

Seminar providing an overview of literature on political economy as developed and tested in comparative politics.

Prerequisites: POLS 601 and POLS 602, or approval of instructor.**POLS 628 Comparative Public Policy****Credits 3. 3 Lecture Hours.**

Seminar in political science theories of public policy as developed and tested in comparative politics; worldwide topics with an emphasis on exploring theoretical frameworks across policy areas, public policy changes and differences across time and countries.

Prerequisites: POLS 601 and POLS 602, or approval of instructor.**POLS 629 Comparative Political Behavior****Credits 3. 3 Lecture Hours.**

Comparative study of political behavior; includes prospective and retrospective voting, party competition, political knowledge and political attitudes; origins of this research field and current theoretical and empirical debates.

Prerequisites: POLS 601 and POLS 602, or approval of instructor.**POLS 630 International Politics****Credits 3. 3 Lecture Hours.**

Survey of international politics; security politics, the development of nations, international law, organization and integration.

POLS 631 Conflict Studies**Credits 3. 3 Lecture Hours.**

The study of international conflict, especially factors pertaining to the causes of war.

Prerequisite: Graduate classification or approval of instructor.**POLS 632 Theory and Method in International Relations****Credits 3. 3 Lecture Hours.**

Theory, techniques and applications of quantitative analysis in international relations.

Prerequisites: POLS 602 and POLS 630 or approval of instructor.**POLS 633 Seminar in Foreign and Security Policy****Credits 3. 3 Lecture Hours.**

Selected aspects of the formation and conduct of foreign and defense policy. May be taken for credit up to three times as content varies.

POLS 634 International Institutions**Credits 3. 3 Lecture Hours.**

Current theoretical and empirical debates in the field of international institutions; includes the value and limitations for understanding the creation, design, behavior, change and impact of international institutions in world politics.

Prerequisite: POLS 630.**POLS 635 International Political Economy****Credits 3. 3 Lecture Hours.**

The study of international political economy, focusing on the economic and political causes and consequences of international trade, foreign direct investment, capital mobility, exchange rate, monetary policy, migration, and development.

Prerequisite: Graduate classification or approval of instructor.**POLS 640 Public Administration and Public Policy****Credits 3. 3 Lecture Hours.**

Overview of the literature on public administration and public policy; attention to links between bureaucracy, democracy and policy outcomes; introduction to the political side of bureaucracy; overview of political science theory on the public policy process.

Prerequisites: Graduate classification.

POLS 641 Seminar in Public Administration**Credits 3. 3 Other Hours.**

Literature and research problems of a selected aspect of public administration. May be taken three times.

POLS 642 Seminar in Public Policy**Credits 3. 3 Other Hours.**

Literature and research problems of a selected aspect of public policy. May be taken three times.

POLS 643 Theory and Practice of Public Administration**Credits 3. 3 Lecture Hours.**

Theory, process and structure of management in the public sector. Internal management and behavior in federal, state or local agencies in a political setting.

POLS 644 Seminar in Politics of Race, Ethnicity and Public Policy**Credits 3. 3 Other Hours.**

Examines race, ethnicity, and public policy; emphasizes how policy process considers race and ethnicity, and differential impact of policy on racial groups. May be taken three times for credit.

Prerequisite: Graduate classification.**POLS 645 Politics, Policy and Administration****Credits 3. 3 Lecture Hours.**

Relationship of politics and administration with reference to the influence of administration and bureaucracy, legislative bodies, parties, interest groups and other forces in the formation and execution of public policy in various levels of, primarily, American government.

POLS 646 Public Policy Theory**Credits 3. 3 Lecture Hours.**

Major theories and classifications of public policies, and general explanations of policy formation and impact; recent research testing major theories.

POLS 650 Normative Political Theory**Credits 3. 3 Lecture Hours.**

Examination of the most influential approaches, concepts and political arguments of classical and contemporary political theory. May be taken for credit up to three times as content varies.

POLS 654 Seminar in Theories of Political Legitimacy, Order and Obligation**Credits 3. 3 Lecture Hours.**

Intensive examination of contending theories of political authority, obligation and justice. May be taken up to three times for credit as content varies.

Prerequisites: Graduate classification and approval of instructor.**POLS 658 American Public Policy****Credits 3. 3 Lecture Hours.**

Theoretically-driven survey of political science research on public policy in the United States; examination of how key institutions of American government affect public policy formation and implementation.

Prerequisites: Graduate classification or approval of instructor.**POLS 659 Federalism and Multi-Level Governance****Credits 3. 3 Lecture Hours.**

Introducing theories of federalism and multi-level governance; application to multiple countries with special reference to the United States; how multi-level governments affect policy outcomes.

Prerequisites: Graduate classification or approval of instructor.**POLS 660 Gateway Seminar in the Politics of Race and Ethnicity****Credits 3. 3 Lecture Hours.**

Overview of the race and ethnicity literature in four different subfields: comparative politics, international relations, American politics, and public administration/policy; emphasis on four themes across the subfields: identity participation (including non traditional participation such as violence), representation, and institutions/structure.

POLS 661 Diversity in Politics**Credits 3. 3 Lecture Hours.**

Major theories and research questions related to the political representation of historically marginalized groups in the U.S. and abroad; including political participation, recruitment, elections and appointment to government posts.

Prerequisites: Graduate classification or permission of instructor.**POLS 662 Policy, Institutions and Representation****Credits 3. 3 Lecture Hours.**

Origins of political identity; how identity affects policy preferences, policy-making venues and specific policy domains.

Prerequisites: Graduate classification or approval of instructor.**POLS 670 American Political Institutions****Credits 3. 3 Lecture Hours.**

Explores the major issues and controversies in the study of American political institutions; topics include executive, legislative and judicial branches of government, as well as formal organizations such as parties and interest groups. May be taken for credit up to three times as content varies.

POLS 671 American Political Behavior**Credits 3. 3 Lecture Hours.**

An introduction to core theories and controversies about American mass political behavior; topics include public opinion, political culture, political socialization, party identification and political participation. May be taken for credit up to three times as content varies.

POLS 672 Seminar in American Political Institutions**Credits 3. 3 Lecture Hours.**

Relevant literature and research problems of selected aspects of American political institutions at the national level; emphasis on original student research. May be taken for credit up to three times as content varies.

Prerequisite: Approval of instructor.**POLS 673 Seminar in Gender and Politics in Comparative Perspective****Credits 3. 3 Lecture Hours.**

Seminar in political science theories of gender and politics as developed and tested in comparative politics; worldwide topics with an emphasis on representation of women in democratic regimes.

Prerequisite: Graduate classification.**POLS 674 Seminar in Race, Ethnicity and American Politics****Credits 3. 3 Other Hours.**

This seminar examines social science theories of race, ethnicity and politics in the United States; highlights the political behavior of Latinos, African-Americans, and Asian Americans. May be taken three times for credit.

Prerequisite: Graduate classification.**POLS 675 Seminar in American Political Processes and Behavior****Credits 3. 3 Lecture Hours.**

Relevant literature and research problems of selected aspects of mass political behavior in the United States; emphasis on original student research. May be taken for credit up to three times as content varies.

Prerequisites: Approval of instructor.

POLS 681 Seminar**Credit 1. 1 Lecture Hour.**

Topics of interest to political scientists with emphasis on professional norms, opportunities and teaching strategies.

Prerequisite: Approval of graduate advisor.**POLS 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Individual instruction in selected fields of political science.

Prerequisite: Approval of instructor.**POLS 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of political science or public policy. May be repeated for credit.

Prerequisite: Approval of instructor.**POLS 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Thesis research. Credit will be given only upon acceptance of completed thesis.

Prerequisite: Approval of graduate advisor.

POSC - Poultry Science

POSC 609 Avian Physiology**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Basic physiological principles pertaining specifically to avian species; cardiovascular, neural, respiratory, digestive, endocrine and reproductive systems; physiological experiments use various avian species as laboratory animals.

Prerequisite: Approval of instructor.**POSC 611/NFSC 611 Advanced Egg & Poultry Meat Processing****Credits 3. 3 Lecture Hours.**

Advanced Egg & Poultry Meat Processing. Focuses on egg markets, egg processing, grading, packaging, safety, quality and consumer acceptance of shell eggs; poultry meat processing (specifically turkeys and broilers), meat quality, markets, consumer acceptance of poultry meat and safety.

Prerequisite: Graduate classification.**Cross Listing:** NFSC 611/POSC 611.**POSC 614 Fermentation and Gastrointestinal Microbiology****Credits 3. 3 Lecture Hours.**

Fermentation and gastrointestinal ecosystems in terms of microorganisms present, their activities and requirements and their interactions in a dynamic system.

Prerequisite: Beginning microbiology and/or biochemistry or approval of instructor.**Cross Listing:** NFSC 614 and VTMI 614.**POSC 615 Avian Nutrition****Credits 3. 3 Lecture Hours.**

Metabolism and nutritional requirements of domestic fowl including proteins, carbohydrates, fats, minerals, vitamins and related feed additives.

Prerequisites: POSC 411 and CHEM 228 or approval of instructor.**POSC 619 Molecular Methods for Microbial Characterization****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Underlying principles of molecular methods for microbial detection and characterization in natural and man-made ecosystems; emphasis on method application and data interpretation; emphasis on microbial pathogens and indicator organisms in foods and environment; laboratory covers select protocols.

Prerequisites: NFSC 326/ANSC 326; SCSC 405; POSC 429; approval of instructor.**Cross Listing:** SCSC 619, NFSC 619 and VTMI 619.**POSC 625/ANSC 623 Precision Diet Formula****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Theoretical and applied principles associated with precision feeding and diet formulation to optimize nutrient requirements; optimization using least-cost formulation, ingredient inventory, farm and feed mill management, and nutrient management of non-ruminants (poultry, swine, horse, and fish) and ruminant animals (beef and dairy).

Prerequisite: POSC 411 or ANSC 318.**Cross Listing:** ANSC 623/POSC 625.**POSC 628 Advanced Poultry Meat Further Processing****Credits 3. 3 Lecture Hours.**

The science and practice of value added products; physical, chemical, microbiological and functional characteristics of value-added poultry products as they affect consumer acceptance, efficiency of production and regulatory approval.

Prerequisite: Graduate classification.**POSC 629/NFSC 629 Microbiology of Food Irradiation****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Lecture plus laboratory overview of electron beam and x-ray based food irradiation principles; provides a working knowledge of using electronic pasteurization as a means of destroying microbial pathogens or retarding microbial spoilage in foods.

Cross Listing: NFSC 629/POSC 629.**POSC 630 Applied Animal Genomics****Credits 3. 3 Lecture Hours.**

Theory and application of genomics by livestock industries; consideration of genetic markers, gene mapping methods, genome analysis and emerging technologies such as microarrays, transgenesis, cloning and marker assisted selection; exposure to bioinformatic tools for genomics.

Prerequisite: GENE 603 or approval of instructor.**Cross Listing:** ANSC 629 and GENE 629.**POSC 634 Diseases of Poultry****Credits 3. 3 Lecture Hours.**

Introduction to Poultry Biosecurity and Diseases. Basic understanding of infectious diseases of poultry; control and prevention of infectious diseases.

Prerequisites: BIOL 113/ BIOL 123.**POSC 645/NFSC 645 Nutrition and Metabolism of Vitamins****Credits 3. 3 Lecture Hours.**

Chemistry and metabolism of the fat soluble and water soluble vitamins and their roles in animals; integrates cellular biochemistry and metabolism of the vitamins in vertebrate animals.

Prerequisites: POSC 411 or ANSC 303/NFSC 303; BICH 410 or BICH 603.**Cross Listing:** NFSC 645/POSC 645.

POSC 649/VTMI 649 Immunology**Credits 3. 3 Lecture Hours.**

Cellular basis of the immune response; relationships between inflammation and acquired immunity, MHC and cell activation; the role of cytokines in immunoregulation and hypersensitivity, vaccines, and the mechanism of immunity to viruses, bacteria and parasites.

Prerequisite: VTPB 409 or equivalent.**Cross Listing:** VTMI 649/POSC 649.**POSC 650/NFSC 650 Nutrition and Metabolism of Minerals****Credits 3. 3 Lecture Hours.**

Nutritional significance of minerals in animal metabolism; chemical, biochemical and physiological role of minerals and homeostatic control in animal metabolism.

Prerequisites: POSC 411 or ANSC 303/NFSC 303; BICH 410 or BICH 603.**Cross Listing:** NFSC 650/POSC 650.**POSC 654 Animal Welfare****Credits 3. 3 Lecture Hours.**

Exploration of animal welfare issues from an animal's perspective; exploration of the general questions that typically affect the welfare of an animal and insight to practices that can be used to improve the welfare of an animal.

Prerequisites: Graduate classification.**POSC 660/VTMI 650 Experimental Immunology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Familiarization, development and integration of techniques into experimental design of immunologic investigation; antibody production, protein purification, immunofluorescence, agar-gel diffusion, immunoelectrophoresis and specialized serologic tests.

Prerequisites: BICH 410 or equivalent; 8 hours of microbiology.**Cross Listing:** VTMI 650/POSC 660.**POSC 679/NFSC 679 Lipoproteins in Health and Disease****Credits 3. 3 Lecture Hours.**

Understanding of lipoprotein biology as it relates to nutrient delivery and disease development; emphasis on understanding how structure influences the function of different lipoprotein particles in human and avian systems; opportunity to study individual lipoprotein profiles or those of animals by modern imaging techniques; background in basic lipid biochemistry helpful.

Cross Listing: NFSC 679/POSC 679.**POSC 681 Seminar****Credits 0-1. 0-1 Other Hours.**

Intensive review of literature on feeding, breeding, incubation, marketing, and management; development of familiarity with journals, organizations, agencies and personnel working on poultry problems. May be repeated as many semesters as desired.

Prerequisite: Graduate classification.**POSC 684 Professional Internship****Credits 0 to 4. 0 to 4 Other Hours.**

A supervised internship in the poultry industry to provide practical experience in a real world setting that is consistent with the student's professional interests.

Prerequisite: Graduate classification.**POSC 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Individual problems involving application of theory and practice in the various disciplines of poultry science.

Prerequisite: Approval of department head.**POSC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of poultry science. May be repeated for credit.

Prerequisite: Approval of instructor.**POSC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research methods and techniques in breeding, nutrition, physiology, marketing, management and products technology. Students must conduct experiments in one of these fields. Design of experiments, collection, analysis and presentation of experimental data. Designed for thesis or dissertation credit.

PROS - Prosthodontics

PROS 600 Mock Board Examination I**Credits 0. 0 Other Hours.**

Preparation for certification by the American Board of Prosthodontics (ABP); includes a comprehensive written examination, presentation and defense of a Part 4 patient presentation with oral examination. Must be taken on a satisfactory/unsatisfactory basis.

PROS 601 Mock Board Examination II**Credits 0. 0 Other Hours.**

A continuation of (I); preparation for certification by the American Board of Prosthodontics (ABP) with a comprehensive written examination, presentation and defense of a Part 2 or 3 patient presentation with oral examination. Must be taken on a satisfactory/unsatisfactory basis.

PROS 602 Mock Board Examination III**Credits 0. 0 Other Hours.**

A continuation of (I) and (II); preparation for certification by American Board of Prosthodontics (ABP) with a comprehensive written examination and presentation and defense of a Part 2 or 3 patient presentation not yet presented with oral examination; selection made of which Part 2, 3, or 4 should possibly be considered for actual presentation to the ABP; required to take Part 1 (written) of the ABP examination in February of third year. Must be taken on a satisfactory/unsatisfactory basis.

PROS 603 Journal Club I**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 604 Journal Club II**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 605 Journal Club III**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 606 Journal Club IV**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 607 Journal Club V**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 608 Journal Club VI**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 609 Journal Club VII**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 610 Journal Club VIII**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 611 Journal Club IX**Credits 0. 0 Other Hours.**

Reviews current prosthodontic literature and encompasses analytical review and evidence-based approach; register for a total of three summers and six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 612 Treatment Planning and Clinical Review I**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 613 Treatment Planning and Clinical Review II**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 614 Treatment Planning and Clinical Review III**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 615 Treatment Planning and Clinical Review IV**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 616 Treatment Planning and Clinical Review V**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 617 Treatment Planning and Clinical Review VI**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 618 Treatment Planning and Clinical Review VII**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 619 Treatment Planning and Clinical Review VIII**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 620 Treatment Planning and Clinical Review IX**Credits 0. 0 Other Hours.**

Series of formalized treatment plans are presented by the students and are discussed and finalized by attending faculty and students; present treatments in progress and completed treatments for review and discussion at this seminar; register for a total of three summers and six semesters.

PROS 621 Interdisciplinary Conferences I**Credits 0. 0 Other Hours.**

Specialized conferences in orthognathic surgery, craniofacial anomalies and dental implants are held weekly and monthly; specialties of prosthodontics, periodontics, oral and maxillofacial surgery, and orthodontics attend with interdisciplinary treatment planning, presentation of treatment results, and future direction based on outcomes and new developments; register for six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 622 Interdisciplinary Conferences II**Credits 0. 0 Other Hours.**

Specialized conferences in orthognathic surgery, craniofacial anomalies and dental implants are held weekly and monthly; specialties of prosthodontics, periodontics, oral and maxillofacial surgery, and orthodontics attend with interdisciplinary treatment planning, presentation of treatment results, and future direction based on outcomes and new developments; register for six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 623 Interdisciplinary Conferences III**Credits 0. 0 Other Hours.**

Specialized conferences in orthognathic surgery, craniofacial anomalies and dental implants are held weekly and monthly; specialties of prosthodontics, periodontics, oral and maxillofacial surgery, and orthodontics attend with interdisciplinary treatment planning, presentation of treatment results, and future direction based on outcomes and new developments; register for six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 624 Interdisciplinary Conferences IV**Credits 0. 0 Other Hours.**

Specialized conferences in orthognathic surgery, craniofacial anomalies and dental implants are held weekly and monthly; specialties of prosthodontics, periodontics, oral and maxillofacial surgery, and orthodontics attend with interdisciplinary treatment planning, presentation of treatment results, and future direction based on outcomes and new developments; register for six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 625 Interdisciplinary Conferences V**Credits 0. 0 Other Hours.**

Specialized conferences in orthognathic surgery, craniofacial anomalies and dental implants are held weekly and monthly; specialties of prosthodontics, periodontics, oral and maxillofacial surgery, and orthodontics attend with interdisciplinary treatment planning, presentation of treatment results, and future direction based on outcomes and new developments; register for six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 626 Interdisciplinary Conferences VI**Credits 0. 0 Other Hours.**

Specialized conferences in orthognathic surgery, craniofacial anomalies and dental implants are held weekly and monthly; specialties of prosthodontics, periodontics, oral and maxillofacial surgery, and orthodontics attend with interdisciplinary treatment planning, presentation of treatment results, and future direction based on outcomes and new developments; register for six semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 627 Prosthodontic Topic Literature Review I**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 628 Prosthodontic Topic Literature Review II**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 629 Prosthodontic Topic Literature Review III**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 630 Prosthodontic Topic Literature Review IV**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 631 Prosthodontic Topic Literature Review V**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 632 Prosthodontic Topic Literature Review VI**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 633 Prosthodontic Topic Literature Review VII**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 634 Prosthodontic Topic Literature Review VIII**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 635 Prosthodontic Topic Literature Review IX**Credits 0.5-1. 0.5-1 Other Hours.**

5-1. Detailed review of classical and current prosthodontic literature organized into specific topics, encompassing all sub-disciplines in prosthodontics; assigned a specific topic, upgrade past literature packets, prepare and disseminate new material and summaries prior to the seminar, and lead discussion at the seminar; register for a total of three summers and six semesters.

PROS 636 Advanced Prosthodontic Concepts and Techniques I**Credit 1. 1 Other Hour.**

Theories, concepts and treatment modalities in complete denture, removable partial denture, and fixed partial denture prosthodontics, with related contemporary literature and techniques; register for a total of two semesters.

PROS 637 Advanced Prosthodontic Concepts and Techniques II**Credit 1. 1 Other Hour.**

Theories, concepts and treatment modalities in complete denture, removable partial denture and fixed partial denture prosthodontics, with related contemporary literature and techniques; register for a total of two semesters.

PROS 638 Related Discipline Seminars I**Credit 1. 1 Other Hour.**

Interactive seminar presentations in the specialty areas of periodontics, oral and maxillofacial surgery, orthodontics, endodontics, dental materials, physiology and other disciplines not covered in the core curriculum specifically related to prosthodontics; register for a total of four semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 639 Related Discipline Seminars II**Credit 1. 1 Other Hour.**

Interactive seminar presentations in the specialty areas of periodontics, oral and maxillofacial surgery, orthodontics, endodontics, dental materials, physiology and other disciplines not covered in the core curriculum specifically related to prosthodontics; register for a total of four semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 640 Related Discipline Seminars III**Credit 1. 1 Other Hour.**

Interactive seminar presentations in the specialty areas of periodontics, oral and maxillofacial surgery, orthodontics, endodontics, dental materials, physiology and other disciplines not covered in the core curriculum specifically related to prosthodontics; register for a total of four semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 641 Related Discipline Seminars IV**Credit 1. 1 Other Hour.**

Interactive seminar presentations in the specialty areas of periodontics, oral and maxillofacial surgery, orthodontics, endodontics, dental materials, physiology and other disciplines not covered in the core curriculum specifically related to prosthodontics; register for a total of four semesters. Must be taken on a satisfactory/unsatisfactory basis.

PROS 642 Advanced TMD and Occlusal Concepts and Treatments**Credit 1.5. 1.5 Other Hour.**

Seminars and clinical application of contemporary literature and techniques in occlusion and temporomandibular disorders.

PROS 643 Clinical Teaching**Credit 1. 1 Other Hour.**

Lectures and clinical instruction involving contact with second-year, third-year and fourth-year dental students; register for one semester. Must be taken on a satisfactory/unsatisfactory basis.

PROS 644 Maxillofacial Prosthodontic Concepts and Treatments**Credit 1. 1 Other Hour.**

Theories, concepts, and treatment modalities related to the maxillofacial patient with a seminar, laboratory, and clinical application format and a VA hospital rotation; implant literature reviews of contemporary material with an evidence-based seminar approach.

PROS 645 Advanced Implant Concepts and Treatment**Credit 1.5. 1.5 Other Hour.**

Seminars and clinical application on implant concepts, designs, placement techniques, and clinical utilization; specific prosthodontic diagnosis and treatment concepts are stressed with evidence-based rationale.

PROS 646 Introduction to Prosthodontic Concepts and Techniques**Credits 2.5. 1.3 Lecture Hour. 1.3 Lab Hour.**

Assessment, development and enhancement of diagnostic and clinical skills in prosthodontics; lecture/laboratory format, concepts in fixed, removable and implant prosthodontics, porcelain laboratory techniques and applications.

PROS 647 Advanced Dental Materials**Credits 2. 2 Lecture Hours.**

Provides knowledge on contemporary dental materials; emphasis on restorative and prosthodontic materials; understanding and overview of the structure and properties of dental materials; specific detailed information on the major categories of dental materials.

PROS 648 Occlusal Concepts and Techniques I**Credit 1.5. 1.5 Other Hour.**

Theories and clinical application of various occlusal concepts with utilization of various categories of recording mechanisms of condylar movements; register for a total of two semesters.

PROS 649 Occlusal Concepts and Techniques II**Credit 1.5. 1.5 Other Hour.**

Theories and clinical application of various occlusal concepts with utilization of various categories of recording mechanisms of condylar movements; register for a total of two semesters.

PROS 650 Geriatric Prosthodontics**Credit 1. 1 Other Hour.**

Seminars and clinical applications on the demographics epidemiology and special considerations of the aging patient in a prosthodontic practice; clinic rotations in geriatric evaluation and management unit team meetings and nursing home rounds. Must be taken on a satisfactory/unsatisfactory basis.

PROS 651 Implant Concepts and Techniques, Surgical Placement**Credits 0. 0 Other Hours.**

Seminars and clinical application of basic implant concepts, diagnosis and treatment planning and the SAC classification, review of various systems, surgical placement considerations and evidence-based rationale; for advanced specialty education students desiring to place implants in the Post-Doctoral Implant Surgical Placement Program. Must be taken on a satisfactory/unsatisfactory basis.

PROS 652 Clinical Prosthodontics I**Credits 3. 3 Other Hours.**

Diagnosis, treatment and management of patients requiring various categories of prosthodontic core; patient selection and load determined by student aptitude and clinical competence.

PROS 653 Clinical Prosthodontics II**Credits 3. 3 Other Hours.**

Diagnosis, treatment and management of patients requiring various categories of prosthodontic core; patient selection and load determined by student aptitude and clinical competence.

PROS 654 Advanced Clinical Prosthodontics I**Credits 2.50 to 4. 2.50 to 4 Other Hours.**

5-4. Diagnosis, treatment, and management of patients requiring various categories of complex prosthodontic care; interspecialty relationships are stressed with developing proficiency in treatment applications; VA hospital rotation is included one-day-a-week for 3 months, treating medically compromised patients with varying degrees of cognitive and physical impairments and maxillofacial prosthetic needs; register for a total of one summer and two semesters.

PROS 655 Advanced Clinical Prosthodontics II**Credits 2.50 to 4. 2.50 to 4 Other Hours.**

5-4. Diagnosis, treatment and management of patients requiring various categories of complex prosthodontic care; interspecialty relationships are stressed with developing proficiency in treatment applications; VA hospital rotation is included one-day-a-week for 3 months, treating medically compromised patients with varying degrees of cognitive and physical impairments and maxillofacial prosthetic needs; register for a total of one summer and two semesters.

PROS 656 Advanced Clinical Prosthodontics III**Credits 2.50 to 4. 2.50 to 4 Other Hours.**

5-4. Diagnosis, treatment, and management of patients requiring various categories of complex prosthodontic care; interspecialty relationships are stressed with developing proficiency in treatment applications; VA hospital rotation is included one-day-a-week for 3 months, treating medically compromised patients with varying degrees of cognitive and physical impairments and maxillofacial prosthetic needs; register for a total of one summer and two semesters.

PROS 657 Advanced Clinical Prosthodontics IV**Credits 2.50 to 5. 2.50 to 5 Other Hours.**

5-5. A continuation of PRO 5402; diagnosing, treating, and managing patients requiring various categories of complex prosthodontic care; rationale and outcomes of treatment are stressed; developing a high level of proficiency in treatment applications.

PROS 658 Advanced Clinical Prosthodontics V**Credits 2.50 to 5. 2.50 to 5 Other Hours.**

5-5. A continuation of PRO 5402; diagnosing, treating, and managing patients requiring various categories of complex prosthodontic care; rationale and outcomes of treatment are stressed; developing a high level of proficiency in treatment applications.

PROS 659 Advanced Clinical Prosthodontics VI**Credits 2.50 to 5. 2.50 to 5 Other Hours.**

5-5. A continuation of PRO 5402; diagnosing, treating, and managing patients requiring various categories of complex prosthodontic care; rationale and outcomes of treatment are stressed, with developing a high level of proficiency in treatment applications.

PROS 689 Special Topics In...**Credits 0 to 4. 0 to 4 Other Hours.**

Selected topics in an identified area of prosthodontics. May be repeated for credit.

PROS 691 Research**Credits 0 to 10. 0 to 10 Other Hours.**

Research for thesis or dissertation.

PSAA - Public Service & Admin

PSAA 601 Foundations of Public Service**Credits 3. 3 Lecture Hours.**

Different perspectives on management and leadership in public service; provides overview of how public and nonprofit organizations work; discusses ethical dilemmas that occur in public service careers.

Prerequisite: PSAA majors only.**PSAA 602 Tools of Leadership in Public Service Organizations****Credits 3. 3 Lecture Hours.**

In-depth study of public service leadership and management skills; centered primarily in the context of organizations and people engaged in governance and public service, primarily public and nonprofit sectors.

Prerequisite: Graduate classification.**PSAA 603 Nongovernmental Organization Management in International Settings****Credits 3. 3 Lecture Hours.**

Exploration of the management of nongovernmental organizations (NGO) in international setting with special attention to their niche alongside private and public sectors, revenue sources, impact on society and converse effects of society and its institutions.

Prerequisite: Graduate classification.**PSAA 604 Emergency Management and Homeland Security****Credits 3. 3 Lecture Hours.**

Provides an overview of emergency management and its connection with homeland security; topics include emergency management cycles, activities that fall into mitigation, preparedness, response, recovery phases of emergency management; other topics may include emergency management of terrorism, disaster communication, media relations, and performance assessment for emergency management organizations.

Prerequisite: Graduate classification.**PSAA 605 Homeland Security Policies, Strategies, and Operations****Credits 3. 3 Lecture Hours.**

In-depth examination of past, current, and emerging national and international homeland security policies, strategies, and selected strategic operations. Emphasis on national and global risks, the national security management system, risk and crisis management, longer-term community recovery, and the strategies of other countries applicable to the United States.

Prerequisite: Graduate classification.**PSAA 606 Environmental Policy and Management****Credits 3. 3 Lecture Hours.**

Covers environmental policy areas, including air and water pollution, toxic waste disposal, public land use, sustainable development, and resource conservation. Explores actions of governmental institutions and actors at all levels in their efforts to implement and manage environmental policy.

Prerequisite(s): Graduate classification.**PSAA 607 Research Methods for Homeland Security Studies****Credits 3. 3 Lecture Hours.**

Introduces fundamental social science research principles, concepts, and methods applied in designing and conducting research and communicating research findings and recommendations; conduct research and write a paper on a homeland security topic and develop expertise in assessing the validity of research done by others.

Prerequisite: Graduate classification.

PSAA 608/CYBR 661 Cybersecurity Policy, Issues and Operations - A Manager's Guide**Credits 3. 3 Lecture Hours.**

Overview related to U.S. homeland defense and homeland security; includes cyber threats; cyberwar; securing cyberspace in public and private sector; protecting data, systems and networks that are connected to the Internet and the Internet of Things.

Prerequisite: Graduate classification.

Cross Listing: CYBR 661/PSAA 608.

PSAA 609 Introduction to Homeland Security**Credits 3. 3 Lecture Hours.**

Broad, multidisciplinary overview of homeland security as a contemporary subject and an evolving discipline; fundamental issues, strategies, challenges, and interdependencies related to preventing, mitigating, preparing for, responding to, recovering from, and building in resiliency to counter intentional and non-intentional threats to homeland security.

Prerequisite: Graduate classification.

PSAA 610 Comparative Public Administration and Management**Credits 3. 3 Lecture Hours.**

Addresses challenges in policy implementation, public administration and public management; draws on experiences of a wide range of developed and developing countries; explores factors behind variations in institutional and social contexts; utilizes case discussion to help students confront challenges and constraints faced in public organizations and public managers worldwide.

Prerequisite: Graduate classification.

PSAA 611 Public Policy Formation**Credits 3. 3 Lecture Hours.**

Examination of public policy formation processes in the United States, with an emphasis on national government.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 613 Immigration and Education Policy**Credits 3. 3 Lecture Hours.**

Explores contemporary issues and debates in US education policy as it relates to immigrant children and children of immigrants; examines long-run and current issues that immigrant students face, such as educational assimilation, equity, and access to higher education; includes readings from the education, economics, and sociology disciplines.

Prerequisite: Graduate Classification.

PSAA 614 Governance and Institutional Reform: A Comparative Perspective**Credits 3. 3 Lecture Hours.**

Examination of approaches to broad public sector reform and focuses on reforms aiming to improve performance, accountability and participation; exploration of issues of governance and development and the challenges of governance reform in developing countries.

Prerequisite: Graduate classification.

PSAA 615 Policy Analysis**Credits 3. 3 Lecture Hours.**

Provides solid working knowledge of the techniques involved in public policy analysis; gives both the theoretical frame work and practical experience necessary for a public manager to analyze public policy effectively.

Prerequisite: ECON 322 or equivalent or approval of instructor.

PSAA 616 Managing Workplace Diversity in Public and Nonprofit Organizations**Credits 3. 3 Lecture Hours.**

Examination of how public policy issues are contested and shaped by the major cleavages in American society, such as race and ethnicity, economic and social class, and gender; strategies for building consensus across these divisions.

Prerequisites: Graduate classification.

PSAA 617 U.S. State and Local Government: Institutions and Policy**Credits 3. 3 Lecture Hours.**

A practical, working knowledge of the institutions and processes through which state and local policy is made and implemented; application of theoretical and empirical tools used to evaluate policy at the state and local levels.

Prerequisite: Graduate classification.

PSAA 618 Education Policy**Credits 3. 3 Lecture Hours.**

Examines the role of government in education and education policy issues, including equity, adequacy and accountability; final section of class will focus on current policy topics, emphasizing two strategies favored by the Obama administration—charter schools and pay for performance.

Prerequisite: Graduate classification.

PSAA 619 Urban Policy and Management**Credits 3. 3 Lecture Hours.**

Overview of U.S. urban policy, management and institutions; theory and research on governmental functions and policies; exposure to actual policymakers and jurisdictions; for careers in regional or local levels of U.S. government.

Prerequisites: Graduate classification; PSAA 601, PSAA 611 or approval of instructor or department head.

PSAA 620 Safeguarding the Nation's Maritime Gateways**Credits 3. 3 Lecture Hours.**

Thorough examination of the national policy, strategies and plans that direct maritime security and harbor safety and how they integrate into homeland security; historical overview, current national strategies, departments and agencies responsible for security, international cooperation efforts and U.S. efforts against piracy and vessel hijacking, future considerations.

Prerequisite: Graduate classification.

PSAA 621 Economic Analysis**Credits 3. 3 Lecture Hours.**

Microeconomic analysis of consumers, firms and markets; macroeconomic analysis of growth and stabilization policies; the government's role in the economy.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 622 Public Finance**Credits 3. 3 Lecture Hours.**

Framework for positive and normative economic analysis of public sector spending and taxation; application of fundamental analytical principles of public finance to current issues in public policy.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 623 Budgeting in Public Service**Credits 3. 3 Lecture Hours.**

Designed to introduce selected topics in public administration and political science literature on the politics of public finance and budgeting; introduce the practice of budgeting by learning language and issues common to budgeting in government.

Prerequisite: Graduate classification.

PSAA 624 Water Policy and Management**Credits 3. 3 Lecture Hours.**

Examination of the role of governmental institutions, political parties, political processes and behavior; public policies and the political history in water governance, policy, policymaking and management; focuses primarily on water policy in the U.S., and addresses serious water issues in other parts of the world.

Prerequisite: Graduate classification.

PSAA 625 Urban Sustainability Policies and Management**Credits 3. 3 Lecture Hours.**

Relationship between local political processes and the pursuit of sustainable development; theoretical underpinnings of sustainability and sustainable development as applied in the local city context of the United States and the way these concepts actually got defined through local political and policymaking processes.

Prerequisite: Graduate classification.

PSAA 626 Contract Management**Credits 3. 3 Lecture Hours.**

Fundamentals of the contracting and procurement processes; exploration of the authority of government agents to contract; examination of remedies in government contracting, including the Government Accountability Office's protest system and actions in federal courts; focuses on the federal level but applicable to state and local levels.

Prerequisite: Graduate classification.

PSAA 630 Program Evaluation in Public and Nonprofit Organizations**Credits 3. 3 Lecture Hours.**

Organizations today are responding to increasing demands for accountability; demands come from an increasingly sophisticated public, clientele, and from funding sources including government, foundations, and corporations; designed to introduce theories, research, and practice for program evaluation and systems that support the organization's information needs.

Prerequisite: Graduate classification.

PSAA 631 Marketing for Nonprofit Organizations**Credits 3. 3 Lecture Hours.**

Provides overviews and examines the underlying fundamental principles, concepts, and methods of strategic marketing as it is associated with the nonprofit sector.

Prerequisite: Graduate classification.

PSAA 632 Fiscal Management for Nonprofits**Credits 3. 3 Lecture Hours.**

Introduction to the underlying fundamental principles, concepts and methods of managerial finance in nonprofit organizations; interpretation and evaluation of the financial reports to inform strategic decision-making in planning and budgeting.

Prerequisite: Graduate classification.

PSAA 633 Philanthropy: Fundraising in Nonprofit Organizations**Credits 3. 3 Lecture Hours.**

Examines the theory and practice of fundraising in nonprofit organizations; overview of fundraising strategies and techniques and how they relate to the achievement of organizational goals; focuses on ways of integrating various fundraising activities into an effective fundraising program.

Prerequisite: Graduate classification.

PSAA 634 Public Management**Credits 3. 3 Lecture Hours.**

Addresses three critical aspects of public management; the role of management in the public sector, validity of the argument that government should be run like a business and the tools public managers need to be effective. Application of organizational theory concepts applied to case studies.

Prerequisite: Graduate classification.

PSAA 635 Social Welfare and Health Policy**Credits 3. 3 Lecture Hours.**

Explores the historical development and impact of US public welfare, child welfare, employment, and health social service programs; analyzes values and assumptions that formed the foundations of social welfare policy and explores the social, economic, political, and cultural context in which these policies developed and their potential future.

Prerequisite: Graduate classification.

PSAA 636 Grant and Project Management in the Public and Nonprofit Sectors**Credits 3. 3 Lecture Hours.**

Examination of the use and provision of grants in the public and nonprofit sectors; exploration of the conceptual background of government and private grants; the management of grants and projects; application of skills and methods related to proposal writing needs statements, program budgets and evaluations.

Prerequisite: Graduate classification.

PSAA 637 Decision Making in Government and Public Service**Credits 3. 3 Lecture Hours.**

Introduction to the study and practice of judgment and decision making processes in government and administrative settings; content is firmly grounded in empirically-based theory and research with a practical slant designed to help develop and improve decision making skills.

Prerequisite: Graduate classification.

PSAA 638 Health Economics and Policy**Credits 3. 3 Lecture Hours.**

Examines health care and health care markets in U.S. and abroad; topics include production of and demand for health, moral hazard and adverse selection in insurance markets, information asymmetries in physician-patient relationships, regulation and payment systems for providers, Medicare, Medicaid and other programs, and comparisons to other countries.

Prerequisite: Graduate classification.

PSAA 640 Energy Policy and Security**Credits 3. 3 Lecture Hours.**

Policy and economic issues related to increasing global reliance on fossil fuels, including the resulting impact on security concerns and global warming; utilizes competitive and non-competitive market theories, non-renewable resource analysis, and cost-benefit analysis.

Prerequisites: Graduate classification; BUSH 621; course experience in microeconomics and quantitative modeling.

PSAA 641 Organization Theory for the Public Sector**Credits 3. 3 Lecture Hours.**

Theories of bureaucracy and control, management, human relations, decision making and organizations and their environments; effects of organizations on individuals, the government and the policy formation process.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 642 Ethics and Public Policy**Credits 3. 3 Lecture Hours.**

Theory and practice for analyzing and responding to the ethical responsibilities and dilemmas for professional conduct; ethical dimensions of analysis and decision making for policy makers and public administrators.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 643 Foundations of the Nonprofit Sector**Credits 3. 3 Lecture Hours.**

Overview of the origins, size, scope and composition of the nonprofit and voluntary sector in American society today; introduction to the historical, political and religious foundations of the nonprofit sector; examines theoretical and conceptual framework.

Prerequisite: Graduate classification.

PSAA 644 Management and Leadership of Nonprofit Organizations**Credits 3. 3 Lecture Hours.**

Introduction and overview of nonprofit organizations and the environment they operate in; examination of the distinctiveness of these organizations and the special skills required for effective management of them; empirical and normative issues surrounding nonprofit management and leadership.

Prerequisite: Graduate classification.

PSAA 645 Networks and Inter-organizational Collaboration**Credits 3. 3 Lecture Hours.**

Introduction to the knowledge base pertaining to inter-organizational relationship and the management environment of network based organizations.

Prerequisite: Graduate classification.

PSAA 646 Accountability in Public Service**Credits 3. 3 Lecture Hours.**

Role of bureaucracy in American government; emphasis on mechanisms of institution accountability and control; readings and concepts from the fields of political science, public administration and administrative law; emphasis on broad theory-based knowledge for careers in public service.

Prerequisite: Graduate classification.

PSAA 648 Performance Management in the Public and Nonprofit Sectors**Credits 3. 3 Lecture Hours.**

Drawing on readings, practical exercises and guest lectures; examine public sector performance management and measurement as tools for improving strategic planning, resource allocation, organizational learning, internal operational processes, and internal and external accountability; apply learning to the development of a particular organization's performance measurement system.

Prerequisite: PSAA 634 or PSAA 644.

PSAA 649 Volunteer and Human Resources in Nonprofit Organizations**Credits 3. 3 Lecture Hours.**

Introduces theories, research and practice for managing personnel and human resources for paid and volunteer staff in nonprofit settings; explores the behaviors and cognitions of participants in nonprofit organizations, the motivational and personnel programs required by the organization, and the managerial strategies for effective human resources management.

Prerequisite: Graduate classification.

PSAA 650 Social Innovation and Entrepreneurship in Nonprofit Management**Credits 3. 3 Lecture Hours.**

Nonprofit management practices and principles related to social entrepreneurship and innovation; research, theories, and practice examples utilized to teach principles of designing and implementing a social innovation which can be applied to domestic and international social problems.

Prerequisites: Graduate classification, PSAA 634 or PSAA 644 or approval of instructor.

PSAA 651 Homeland Security and Homeland Defense**Credits 3. 3 Lecture Hours.**

Comprehensive study of the strategy, laws, doctrine and policy governing the Department of Defense's (DOD) role in its Homeland Defense mission and also the Homeland Security mission; DOD's support to other federal departments and the states under federal law such as The Stafford Act and Defense Support of Civil Authorities.

Prerequisite: Graduate classification.

PSAA 652 Protection of the Nation's Critical Infrastructure**Credits 3. 3 Lecture Hours.**

Protection of the Nation's Critical Infrastructure. Survey an overview of the Nation's strategies for Critical Infrastructure Protection and securing cyberspace and the definition of critical infrastructures as it exists today; master's level course intended for individuals preparing for professional careers in the conduct of international affairs.

PSAA 653 Weapons of Mass Destruction**Credits 3. 3 Lecture Hours.**

Comprehensive study of weapons of mass destruction and their potential use by a terrorist group; considers both political and technological issues associated with WMD terrorism; focus will be on prevention, protection, response and recovery to WMD terrorism events; intended for individuals preparing for professional careers in the conduct of international affairs.

PSAA 654 U.S. Border Security: Policies, Strategies and Issues**Credits 3. 3 Lecture Hours.**

U.S. border security policies, strategies and issues; policies and strategies for homeland defense and security; Mexican and Canadian governments' border policies; southern U.S. border situation and issues; considerations when border land is privately versus federally owned; impact of criminal elements on border security; efforts to secure the U.S. coasts.

Prerequisite: Graduate classification.

PSAA 655 Domestic Intelligence Operations: Legalities, Policies, and Procedures**Credits 3. 3 Lecture Hours.**

Examination of laws and national policies and operations surrounding domestic intelligence within the United States; departments and agencies with domestic intelligence responsibilities, their missions, operations and resources; selected readings, government documents and case studies.

Prerequisite: Graduate classification.

PSAA 656 Fundamentals of Homeland Security**Credits 3. 3 Lecture Hours.**

An introduction to the theory, practice, challenge and prospects for securing the "American Homeland" against terrorist attack, with special emphasis on how American policy makers are resolving this dilemma, and their prospects for the future; draws heavily on current events and emerging policy solutions as examples.

Prerequisite: Graduate classification.**PSAA 657/INTA 657 Terrorism in Today's World****Credits 3. 3 Lecture Hours.**

Comprehensive survey of international terrorism from its origins to the present; emphasis on how the U.S. government has responded and how it has organized to counter the threat; all major terrorist groups studied; understanding the nature of the terrorist threat and the implications for the U.S. government.

Prerequisite: Graduate classification.**Cross Listing:** INTA 657/PSAA 657.**PSAA 658 Disaster Recovery and Business Continuity****Credits 3. 3 Lecture Hours.**

Comprehensive overview of disaster recovery and business continuity management; guidelines for developing, implementing, maintaining and testing local, state and federal disaster recovery and business continuity plans; public and private roles and partnerships for emergency and crisis management; continuity of operations.

Prerequisite: Graduate classification.**PSAA 660 Domestic Terrorism: The Internal Threat to America****Credits 3. 3 Lecture Hours.**

Survey of domestic terrorism from the first manifestation of terror tactics in the United States to the anarchist movement of the 1880s to the present; study of domestic terrorist threats, the growing threats from weapons of mass destruction, and the implications WMDs have for all levels of government.

Prerequisite: Graduate classification.**PSAA 661 Human Resources Management in Government and Public Service****Credits 3. 3 Lecture Hours.**

Organization and operation of civil service personnel systems in American governments.

Prerequisites: Graduate classification.**PSAA 663/AGEC 604 Natural Resource Economics****Credits 3. 3 Lecture Hours.**

Critical evaluation of policies and procedures in natural resource development and use; identification of problems in resource development, the political-economic decision-making process and analytical tools which can contribute to economic decisions.

Prerequisite: ECON 323.**Cross Listing:** AGEC 604/PSAA 663.**PSAA 667 Principles of International Law****Credits 3. 3 Lecture Hours.**

Introduction to the nature and sources of international law, including jurisdiction of states; law governing the making, interpretation, application and termination of treaties and agreements; recognition of states and government; nationality of persons and corporations; state immunities from jurisdiction and control; and human rights.

Prerequisite: Graduate classification.**PSAA 668/INTA 612 U.S. Law and Homeland Security****Credits 3. 3 Lecture Hours.**

Analyze the threat to the homeland as reflected in a number of pre and post 9/11 commission reports; master's level course intended for individuals preparing for professional careers in the conduct of international affairs.

Prerequisite: Graduate classification.**Cross Listing:** INTA 612/PSAA 668.**PSAA 669 Legal Environment of Nonprofit Management****Credits 3. 3 Lecture Hours.**

Laws, policies, and ideals affecting the creation and governance of nonprofit organizations; includes medical, education, cultural, social, religious, and advocacy organizations; considers these organizations' contributions to society, how they cooperate with or rival for-profit entities, and how they should be governed.

Prerequisite: Graduate classification.**PSAA 670 Public Information Systems Management****Credits 3. 3 Lecture Hours.**

Introduction to information systems for future public managers, management and public policy issues regarding information systems, and current policy issues related to information and communications technology.

Prerequisite: Graduate classification.**PSAA 671 Science and Technology Policy****Credits 3. 3 Lecture Hours.**

An overview of the role of science and technology in the public policy process; explores the impact of public policy on science and technology. These two perspectives are radically distinct, yet intertwined in the broader process of public policy making in the United States.

Prerequisite: Graduate classification.**PSAA 674 Political Economy of International Development****Credits 3. 3 Lecture Hours.**

Examines aspects of international development and underdevelopment, including lack of sustained economic growth and the prevalence of income inequality; designed to provide leaders in public service areas with basic knowledge of development and development assistance in cross-national and regional perspectives and the tools to analyze information in the future.

Prerequisite: Graduate classification.**PSAA 675 Public Service and Administration Capstone Seminar****Credits 3. 3 Lecture Hours.**

Provides a capstone experience for students as they operate in teams to address an important policy and administrative issue; draws on the coursework and experiences of their Bush School education to develop specific recommendations for design, implementation and evaluation of this project task. For MPSA majors only.

Prerequisites: For MPSA majors only; graduate classification; approval of MPSA director.**PSAA 676 Public Service and Administration Capstone Seminar II****Credits 3. 3 Lecture Hours.**

Provides a capstone experience as they operate in teams to address an important policy and administrative issue; draws on the coursework and experiences of their Bush School education to develop specific recommendations for design, implementation and evaluation of this project task. Continuation of BUSH 675.

Prerequisites: BUSH 675; approval of MPSA director.

PSAA 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Directed internship in a public or private organization to provide on-the-job training with professionals in organizational settings appropriate to the student's professional objectives.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual instruction in selected problems in government and public service.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of government and public service. May be repeated for credit.

Prerequisites: Graduate classification and approval of MPSA or MPIA director.

PSAA 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

PSYC - Psychology

PSYC 603 Motivation and Cognitive Processes**Credits 3. 3 Lecture Hours.**

Selected topics in areas of motivation and higher mental processes; symbolic processes in perceptual organization; learning and remembering, reasoning and creativity.

Prerequisite: Graduate classification or approval of instructor.

PSYC 605 Memory and Consciousness**Credits 3. 3 Lecture Hours.**

Research on consciousness and memory; all levels of conscious awareness associated with memory retrieval from detailed personal experiences of remembering to unaware uses of memory; implicit and explicit memory; automatic and controlled processes; metacognitive explorations of consciousness.

Prerequisite: Graduate classification or approval of instructor.

PSYC 606/NRSC 606 Learning**Credits 3. 3 Lecture Hours.**

Procedural and theoretical issues in study of basic learning mechanisms in animals and humans, including Pavlovian and instrumental conditioning. Application of this work to other domains and relevant biological mechanisms also discussed.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: NRSC 606/PSYC 606.

PSYC 607 Experimental Psychology**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Experimental methods; developing a general frame of reference for approaching experimental research problems.

Prerequisite: Graduate classification or approval of instructor.

PSYC 608 Introduction to Clinical Ethics and Techniques**Credits 3. 3 Lecture Hours.**

Ethical and legal issues in clinical practice; development of listening and interpretation skills; supervised practicum in interviewing non-clinical subjects; structured role-play of clinical situations.

Prerequisite: Graduate classification or approval of instructor.

PSYC 609/NRSC 609 Physiological Psychology**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Current research and methodological procedures on physiological bases of sensation-perception, memory and learning, arousal-sleep-attention, emotions and motivation.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: NRSC 609/PSYC 609.

PSYC 610 Organizational Psychology**Credits 3. 3 Lecture Hours.**

Current literature and research in employee motivation, satisfaction, leadership, communication, group conflict and other group processes.

Prerequisite: Graduate classification or approval of instructor.

PSYC 611 Personnel Psychology**Credits 3. 3 Lecture Hours.**

Application of psychological principles and research methods to the areas of selection, placement, job analysis, performance appraisal and training.

Prerequisites: PSYC 251 or PSYC 353 or graduate classification or approval of instructor.

PSYC 613 Practicum in Psychological Assessment**Credits 1 to 4. 1 to 4 Other Hours.**

Application of psychological assessment across the life-span; assessment of cognitive, intellectual, academic, and memory abilities and adaptive behavior; assessment of personality, behavioral style, and systems/environment; integration of assessment measures in comprehensive psychological evaluations; attendance required at Practicum Seminar designed to integrate research, coursework, and applied training and supervisory instruction from a faculty supervisor; at least 3 credits and no more than 18 credits applied to degree plan.

Prerequisites: PSYC 623 and PSYC 624, or approval of instructor.

PSYC 614 Practicum in Psychology**Credits 1 to 6. 1 to 6 Other Hours.**

Practical on-the-job experience for graduate students. Activities will be guided by psychologists in the following areas: behavior modification, social, clinical, experimental and industrial. Supervision will be provided by members of University staff. May be taken more than once but not to exceed 18 hours of credit toward a graduate degree.

Prerequisite: PSYC 608 or approval of instructor.

PSYC 615/NRSC 615 Perceptual Processes**Credits 3. 3 Lecture Hours.**

Complex sensory and perceptual phenomena with emphasis on the relationship between perception and motivation, cognition, creativity and instinctive/ethological; learning/experiential factors in higher level perceptual processes.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: NRSC 615/PSYC 615.

PSYC 616 Treatment of Problem Behavior in Children and Families**Credits 3. 3 Lecture Hours.**

Current methods of treating families with children displaying aggressive, hyperactive, underachieving and other problem behaviors in natural settings; behavior of children and adolescents at home, school and at play.

Prerequisite: Approval of instructor.

PSYC 617 Analytical Psychology**Credits 3. 3 Lecture Hours.**

Survey emphasizing Jungian psychology but including coverage of Freudian psychology; application of analytical principles and concepts to a variety of clinical issues and situations.

Prerequisite: Approval of instructor.

PSYC 618 Psychology of Persuasion**Credits 3. 3 Lecture Hours.**

Theory and scientific evidence regarding strategies and tactics of persuasion; explores theoretical controversies and presents potential integrations.

Prerequisite: Graduate classification or approval of instructor.

PSYC 619 History and Systems of Psychology**Credits 3. 3 Lecture Hours.**

Historical examination of scientific psychology's antecedents in philosophy and physiology; early systems of psychology including structuralism, functionalism, behaviorism, Gestalt psychology and psychoanalysis.

Prerequisite: Graduate classification or approval of instructor.

PSYC 620 Theories of Social Psychology**Credits 3. 3 Lecture Hours.**

Current theories of social psychology and a review of related studies to these theories; theories of attitude change, prosocial behavior, aggression, equity, coalition formation, social learning and S-R theory applied to social behavior.

Prerequisite: Graduate classification or approval of instructor.

PSYC 621 Seminar in Social Psychology**Credits 3. 3 Other Hours.**

Attitudes and persuasion; small group interaction and performance; prosocial behavior; aggression; self concept; applied social problems; gender differences in social interaction; and social cognition. May be repeated up to three times for credit.

Prerequisite: Approval of instructor.

PSYC 622 Affective Science**Credits 3. 3 Lecture Hours.**

Overview of theories and approaches in the interdisciplinary field of affective science; historical and contemporary approaches focused on emotional and affective processes.

Prerequisite: Graduate classification or approval of instructor.

PSYC 623 Psychological Assessment I**Credits 3. 3 Lecture Hours.**

Principles of psychological testing; uses and critical evaluation of tests of achievement, intelligence, aptitude and personality.

Prerequisite: Enrollment in Clinical Psychology Program or approval of instructor.

PSYC 624 Psychological Assessment II**Credits 3. 3 Lecture Hours.**

Theory and application of psychological assessment of children, adolescents, and adults; assessment of cognitive, intellectual, academic, and memory abilities and adaptive behavior; integration of assessment measures in comprehensive psychological evaluations.

Prerequisite: Enrollment in Clinical Psychology Program or approval of instructor.

PSYC 626 Psychopathology**Credits 3. 3 Lecture Hours.**

Various symptom categories in psychopathology including differing theoretical conceptualizations of these symptom categories, and theories and research concerning etiology and treatment.

Prerequisite: Enrollment in Clinical Psychology Program or approval of instructor.

PSYC 627 Psychological Assessment of Children and Adolescents**Credits 3. 3 Lecture Hours.**

Theory and application of psychological assessment of toddlers, children, and adolescents; assessment of cognitive, intellectual, academic, and memory abilities and adaptive behavior; assessment of personality, behavioral style, family functioning, and child-focused systems; integration of assessment measures in comprehensive psychological evaluations.

Prerequisite: PSYC 624 or approval of instructor.

PSYC 628 Behavior Disorders in Children**Credits 3. 3 Lecture Hours.**

Different systems of classification including research and theory about the origins and anticipated outcomes of various emotional disorders; families of disturbed children; major treatment approaches and community resources for intervention.

Prerequisites: PSYC 407 or equivalent and graduate classification or approval of instructor.

PSYC 629 Seminar in Clinical/Community Psychology**Credits 3. 3 Other Hours.**

Assessment and treatment of specific clinical disorders such as depression, sexual dysfunctions and deviations, anxiety-based disorders, autism, marital distress and psychophysiological disorders. May be repeated up to three times for credit.

Prerequisites: PSYC 608 and PSYC 626; PSYC 623 or equivalent.

PSYC 630 Health Psychology and Behavioral Medicine**Credits 3. 3 Lecture Hours.**

Theory, research and practice of health psychology emphasizing the prevention and modification of health compromising behaviors; psychological management of stress, pain and chronic/terminal illness; effective interventions for specific health behaviors/disorders.

Prerequisite: Graduate classification or approval of instructor.

PSYC 633 Gender and Minority Issues in Clinical Psychology**Credits 3. 3 Lecture Hours.**

Human behavior and mental health as a function of culture, gender and sexual orientation; discussion of absolutist, relativist and universalist perspectives in cross-cultural psychology; psychology of stereotype and prejudice; adjustment through acculturation and biculturalism; learning about our own and other cultures.

Prerequisite: Graduate classification or approval of instructor.

PSYC 634 Principles of Human Development**Credits 3. 3 Lecture Hours.**

Biological, psychological and cultural interrelationships in human development; principles and methods as illustrated in research and theoretical contributions; experiences in procedures of child study.

Prerequisite: Graduate classification or approval of instructor.

PSYC 635 Behavioral and Cellular Research Seminar**Credits 2. 2 Other Hours.**

Expose graduate students to neuroscience research, theory, and proposal development; research presentations by guest speakers, faculty, and graduate students; Discussions, readings and presentations on issues related to research design, statistics, methodology, ethics, IACUC, grant writing, presentation skills, job talks, and other relevant topics. May be taken four times for credit.

Prerequisite: Graduate classification or approval of instructor.

PSYC 636 Seminar in Developmental Psychology**Credits 3. 3 Other Hours.**

Cognitive development; social and emotional development; developmental abnormalities in connection with social/emotional and cognitive development; language acquisition; family processes; and development during infancy; recent developments in these fields. Topics will vary from semester to semester; may be repeated for credit up to three times as topics change.

Prerequisite: Graduate classification or approval of instructor.

PSYC 637 Clinical Interventions I**Credits 3. 3 Lecture Hours.**

Theory, research and techniques related to evidence-based behavioral and cognitive-behavioral approaches to clinical interventions; ethical, professional, multicultural and history/systems issues in therapeutic psychological interventions.

Prerequisite: Enrollment in Clinical Psychology Graduate Program or approval of instructor.

PSYC 638 Clinical Interventions II**Credits 3. 3 Lecture Hours.**

Theory, research, and techniques related to evidence-based interpersonal, psychodynamic, group therapy, and family therapy approaches to clinical interventions; ethical, professional, multicultural, and history/systems issues in therapeutic psychological interventions.

Prerequisite: Enrollment in Clinical Psychology Graduate Program or approval of instructor.

PSYC 639 Pediatric Psychology**Credits 3. 3 Lecture Hours.**

Application of clinical/counseling/school psychology to children and adolescents with chronic illnesses or disabilities and their families; theoretical foundations and models for consultation, assessment and intervention strategies; unique ethical and professional issues associated with research and service delivery in child health psychology/pediatric behavioral medicine.

Prerequisite: Approval of instructor.

PSYC 640 Personality Psychology**Credits 3. 3 Lecture Hours.**

Research on personality structure, process and development covering all levels of individuality from traits to goals/motives to narrative identities; research methods including factor analysis; connections between personality research and other major areas of psychology including developmental, clinical, organizational and social.

Prerequisite: Graduate classification or approval of instructor.

PSYC 649/NRSC 649 Seminar in Behavioral Neuroscience**Credits 3. 3 Lecture Hours.**

Behavioral neuroscience; including behavioral pharmacology, neuropharmacology, methods and techniques, drug reinforcement, behavioral toxicology, pain perception and ingestive behavior. May be repeated up to three times for credit.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: NRSC 649/PSYC 649.

PSYC 650/NRSC 650 Clinical Psychopharmacology**Credits 3. 3 Lecture Hours.**

Survey of topics in clinical psychopharmacology, including pharmacodynamics, major neurotransmitter systems, and therapeutic applications and limitations.

Prerequisite: Graduate classification or approval of instructor.

Cross Listing: NRSC 650/PSYC 650.

PSYC 651/AFST 651 Cultural Psychology**Credits 3. 3 Lecture Hours.**

Surveys key readings in the field of cultural psychology; discussion and examination of relationship between psychological processes (e.g., motivation, memory, self perception, prejudice) and sociocultural contexts.

Prerequisites: Enrollment in a graduate program or approval of instructor.

Cross Listing: AFST 651/PSYC 651.

PSYC 654 Psychometrics and Survey Design in Industrial/Organizational Psychology**Credits 3. 3 Lecture Hours.**

Study of psychological measurement for testing and assessment purposes in I/O psychology; classical and modern test theories are introduced as well as their implications for test construction and survey design; emphasis on skill acquisition through developing, administering and scoring predictor or criterion tests and presenting results.

Prerequisites: PSYC 652; PSYC 653; graduate classification or approval of instructor.

PSYC 656 Advanced Selection**Credits 3. 3 Lecture Hours.**

An in-depth analysis of psychological principles and employee selection methods with a focus on applied practice and current topics; emphasis on the application of evidence-based best practices to the selection process; importance of job and work analysis, testing and assessment, psychometrics, validation procedures, and measurement in light of ethical, legal, diversity and international issues.

Prerequisites: Graduate classification or approval of instructor.

PSYC 657 Training and Performance Management**Credits 3. 3 Lecture Hours.**

A comprehensive review of theory, research, current topics and practice associated with training and performance management; training as an organizational subsystem is emphasized as the model for the design, implementation and evaluation of training programs; appraisal and management of work performance for various organizational purposes.

Prerequisites: Graduate classification or approval of instructor.

PSYC 658 Work Attitudes and Motivation**Credits 3. 3 Lecture Hours.**

A critical analysis of major theories, current research and practical or current issues associated with employee attitudes and motivation in the workplace; topics include job satisfaction, organizational commitment, work engagement, stress, absenteeism, turnover, motivation, job design and quality of work, and work values; key methodological and measurement issues; application of social psychology literature to workplace problems.

Prerequisites: Graduate classification or approval of instructor.

PSYC 659 Groups, Teams and Leadership**Credits 3. 3 Lecture Hours.**

An in-depth review of the factors leading to effective groups, teams and leadership in organizations; topics include strategies for building high performance teams and techniques for assessing, selecting and developing leaders; the course integrates theory, research and current topics with experiential learning; application of social psychology literature to workplace problems.

Prerequisites: Graduate classification or approval of instructor.

PSYC 670 Professional Seminar in Social Psychology**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Survey of recent theoretical, methodological and empirical developments in social psychology; different topics each semester will include theory and research on attitudes and persuasion, social cognition, interpersonal relationships, group processes, social development, and personality and social behavior. May be taken for credit up to eight times.

Prerequisite: Graduate classification or approval of instructor.**PSYC 671/NRSC 671 Experimental Design for Behavioral Scientists****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Intensive practical study of designs of special interest to behavioral scientists; repeated measures designs.

Prerequisite: Approval of instructor.**Cross Listing:** NRSC 671/PSYC 671.**PSYC 675 Clinical Psychology and the Legal System****Credits 3. 3 Lecture Hours.**

Survey of theoretical and applied topics relevant to clinical psychology in the legal system; includes assessment of adjudicative competence, criminal responsibility and risk assessment; correctional psychology and offender rehabilitation.

Prerequisite: Approval of instructor.**PSYC 678/CPSY 678 Couples Therapy****Credits 3. 3 Lecture Hours.**

Theory and practice of marital therapy emphasizing systems and communication approaches; effective strategies and techniques; therapy with specific marital problems and obstacles to effective therapy.

Prerequisites: CPSY 631; CPSY 639 or equivalent.**Cross Listing:** CPSY 678/PSYC 678.**PSYC 680 Seminar in Organizational Psychology****Credits 3. 3 Other Hours.**

Areas of organizational psychology: job stress, socialization processes, motivation, leadership, person perception in organizations, conflict management. May be repeated up to five times for credit; content will vary by semester.

Prerequisite: PSYC 610 or approval of instructor.**PSYC 681 Industrial/Organizational Psychology****Credits 1 to 3. 1 to 3 Lecture Hours.**

Both research and applied colloquia provided by I/O psychologists and individuals in related disciplines.

Prerequisite: Graduate classification or approval of instructor.**PSYC 682 Seminar in Personnel Selection and Placement****Credits 3. 3 Other Hours.**

Personnel selection and placement including job analysis and evaluation, psychological testing, test development, psychometric theory, theories of test fairness, validity generalization, utility theory, performance appraisal and selection/placement decision models. May be repeated up to five times for credit; content will vary by semester.

Prerequisite: PSYC 611 or approval of instructor.**PSYC 683 Professional Seminar****Credit 1. 1 Other Hour.**

Guidance in searching for and securing internships and jobs upon graduation; review of internship requirements and expectations; professional development sessions and preparation of application materials; assistance in the transition from student to professional, e.g., professional identity, affiliation and networks. May be taken three times for credit.

Prerequisites: Graduate classification or approval of instructor.**PSYC 684 Professional Internship****Credits 0 to 12. 0 to 12 Other Hours.**

Full-time internship experience in a departmentally-approved internship training facility. May be taken up to 12 hours for credit.

Prerequisite: Approval of instructor.**PSYC 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problem in psychology or special topics to fit small group requirements.

Prerequisite: Approval of instructor.**PSYC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of psychology. May be repeated for credit.

Prerequisite: Graduate classification or approval of instructor.**PSYC 690 Cognoscenti: Professional Issues in Cognitive Psychology****Credits 2. 2 Lecture Hours.**

Introduce students to current themes in research, theory and practice in cognitive psychology; presentations by guest speakers from within and outside the University.

Prerequisite: Graduate classification or approval of instructor.**PSYC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

PSYC 696 Principles and Methods for Teaching in Psychology**Credits 3. 3 Lecture Hours.**

Practical issues related to college teaching; reflection on and improvement of teaching skills; developing course objectives and teaching philosophies; improving teaching tools; understanding teaching-learning situations; advising students; ethics in teaching.

Prerequisite: Graduate classification or approval of instructor.**PSYC 697 Seminar in the Teaching of Introductory Psychology****Credits 3. 3 Lecture Hours.**

Introductory methods relevant to teaching psychology; for graduate students assisting in the teaching of PSYC 107.

Prerequisite: Graduate classification or approval of instructor.

RDNG - Reading

RDNG 602 Teaching Reading in the Elementary Grades**Credits 3. 3 Lecture Hours.**

Methods and materials of reading instruction in the elementary grades; past, present and emerging programs; organization and administration of programs and classroom management; teaching reading to special groups; issues in reading.

RDNG 603 Using Advanced Literacy to Teach and Learn Across Disciplines**Credits 3. 3 Lecture Hours.**

Examination of pedagogies that use literacy to help students learn across disciplines and content areas; exploration of aspects of literacy practices including reading, writing, discussion, interpretive and critical activities for the comprehension and evaluation of new content; strategies for teaching new literacies skills associated with ICT, media and visual reading; examination of theoretically grounded and empirically supported instructional methods.

Prerequisites: Graduate classification or approval of instructor.

RDNG 604 Reading Diagnosis**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Appraisal and diagnosis of reading problems; practicum in administration and interpretation of individual reading inventories.

Prerequisite: RDNG 649 or RDNG 674 recommended.**RDNG 605 Practicum in Literacy Intervention****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Practicum in recognition, diagnosis, remediation and corrective procedures of reading-study problems; demonstration and laboratory analysis of physiological and psychological factors related to reading disabilities.

Prerequisites: RDNG 604.**RDNG 609 Foundations of Reading Instruction****Credits 3. 3 Lecture Hours.**

Psychological, linguistic and physical factors related to reading performance; implications for content and teaching methods; appraisal of current research and related reading for teachers, supervisors and reading specialists.

Prerequisites: RDNG 649 and RDNG 674 or approval of instructor.**RDNG 610 Elementary Literacy Instruction for Facilitating STEM Learning****Credits 3. 3 Lecture Hours.**

Evidenced based instruction of literacy skills and strategies facilitating student learning of STEM content and processes; traditional literacy and new literacies.

Prerequisite: Graduate classification.**RDNG 612 Children's Literature and Literacy****Credits 3. 3 Lecture Hours.**

Children's Literature and Literacy. Critical selection and evaluation of various children's literature genres; comparative studies of children's literature; development, implementation and evaluation of research in children's literature and literacy; integration of reading and response theory into the study of literature.

Prerequisite: Graduate classification.**RDNG 613 Multicultural Children's Literature and Literacy****Credits 3. 3 Lecture Hours.**

Multicultural Children's Literature and Literacy. Analysis and evaluation of Native American, Black and Hispanic children's literature; development, implementation and evaluation of research in multicultural literature and literacy; analysis of issues influencing multicultural literature and literacy.

Prerequisites: RDNG 612; graduate classification.**RDNG 616 Organization and Supervision of Reading Programs****Credits 3. 3 Lecture Hours.**

Procedures, skills and dispositions associated with the development, implementation and leadership of literacy programs at a school and district level; roles of reading specialists, professional development, program evaluation, change processes.

Prerequisites: Doctoral classification; approval of instructor.**RDNG 620 Literacy and Language****Credits 3. 3 Lecture Hours.**

Orthography of different languages and its relation to literacy acquisition and failure to acquire basic literacy skills. This is a seminar course in reading, language arts, bilingual education, psychology, linguistics, and related fields.

Prerequisite: Graduate classification.**RDNG 630 Writing: Development, Assessment and Instruction****Credits 3. 3 Lecture Hours.**

Examines the nature of writing development and how to assess both formally and informally; includes successful instructional techniques based on empirical evidence.

Prerequisite: Graduate classification.**RDNG 634 Reading Research and Trends****Credits 3. 3 Lecture Hours.**

Exploration of recent research in reading; identification of trends and patterns in research designs and findings; and generation of new hypotheses and guidelines for improving current practice.

Prerequisites: Doctoral classification or approval of instructor.**RDNG 635 Theories of the Reading Process****Credits 3. 3 Lecture Hours.**

Seminar in the study and critique of major theories of the reading process that have been influential in the fields of reading, language arts, educational psychology and related fields.

Prerequisite: Doctoral classification or approval of instructor.**RDNG 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of reading. May be repeated for credit.

RENr Renewable Natural Resrces

RENr 650/ESSM 676 Leadership Development and Management of Environmental NGOs**Credits 3. 3 Lecture Hours.**

Trends and increasing power of NGOs in environment and sustainable development; understanding of the organizational structures, functions, planning and management processes of environmental NGOs; technical skills and leadership qualities for careers with environmental NGOs.

Prerequisite: Graduate classification.**Cross Listing:** ESSM 676/RENr 650.**RENr 651 Geographic Information System for Resource Management****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Geographic Information System (GIS) approach to the integration of spatial and attribute data to study the capture, analysis, manipulation and portrayal of natural resource data; examination of data types/formats, as well as the integration of GIS with remote sensing and Global Positioning System; laboratory includes extensive use of GIS applications to conduct analyses of topics in natural resources.

Prerequisite: Graduate classification.**Cross Listing:** BAEN 651 and ESSM 651.**RENr 659 Ecological Economics****Credits 3. 3 Lecture Hours.**

Study of the relationships between ecosystems and economic systems; understanding the effects of human economic endeavors on ecological systems and how the ecological benefits and costs of such activities can be quantified and internalized.

Prerequisite: Graduate classification.**Cross Listing:** AGECE 659 and ESSM 671.

RENR 660/ESSM 672 Environmental Impact Analysis for Renewable Natural Resources**Credits 3. 3 Lecture Hours.**

Analysis and critique of contemporary environmental analysis methods in current use; environmental impact statements; national policies; political, social and legal ramifications as related to development and use of renewable natural resources.

Cross Listing: ESSM 672/RENR 660.**RENR 662 Environmental Law and Policy****Credits 3. 3 Lecture Hours.**

Analysis of the legal theories used to allocate and protect environmental resources; common law, federal and state statutes, and international treaties dealing with the environment; policies and laws for controlling air, water, solid waste, toxic waste and water pollution; species protection and natural resource use.

RENR 678/RPTS 678 Latent Variable Model Applications in the Leisure Sciences**Credits 3. 3 Lecture Hours.**

Introduction to structural equation modeling (SEM); background on conceptual issues, application of the method, and insight on SEM software; measurement theory, missing data analysis, non-normal data, confirmatory factor analysis, path analysis, multi-group models.

Prerequisites: STAT 636 or approval of instructor.**Cross Listing:** RPTS 678/RENR 678.

RPTS - Rec, Park & Tourism Sci

RPTS 601 Interrelationships of Recreation and Leisure Concepts**Credits 3. 3 Lecture Hours.**

History and philosophy of the field of recreation and parks; fundamentals of planning, development and management of resources allocated for recreation, parks and tourism purposes; development of the recreation movement with broad treatment of the role of recreation and parks in contemporary society.

RPTS 602 Social Science Foundations of Recreation, Parks and Tourism**Credits 3. 3 Lecture Hours.**

Sociological and social psychological dimensions of leisure, recreation and related behavior; nature and function of leisure for individuals and for society; implications for development and management of recreation resources.

Prerequisite: RPTS 601 or previous academic background in recreation and parks.**RPTS 603 Financing and Marketing Park and Recreation Resources****Credits 3. 3 Lecture Hours.**

Positioning park and recreation services; traditional and non-traditional sources of financing for developing services and facilities; philosophy and techniques of marketing services and facilities.

RPTS 604 Principles of Community and Community Development**Credits 3. 3 Lecture Hours.**

Examines different theories about community development as well as the concept of community; explores measurement and other methodological issues in the conduct of basic and applied community research.

Prerequisite: Graduate classification.**RPTS 605 Community Organization****Credits 3. 3 Lecture Hours.**

Examines how community organization and institutions differ and result from diverse social, cultural and demographic factors; explores how these factors restructure communities over time and community responses to restructuring.

Prerequisite: Graduate classification.**RPTS 606 Overview of Tourism****Credits 3. 3 Lecture Hours.**

Theoretical introduction to the field of tourism sciences; the cooperative and dynamic nature of decision-making in tourism; the contributions made by various disciplines towards understanding the consequences of tourism trade and activity; and identification of critical issues in the study of travel and tourism.

RPTS 609 Social, Economic and Cultural Issues in Outdoor Recreation and Natural Resources**Credits 3. 3 Lecture Hours.**

Survey of socio-economic and cultural characteristics impinging on provision of outdoor recreation opportunities in urban and non-urban settings; implications of social and cultural factors on recreation resource use patterns, resource development and policy issues.

RPTS 615 Analytic Techniques in Recreation, Parks and Tourism**Credits 3. 3 Lecture Hours.**

Analysis of current research; instruments and analytic techniques used in the selection and formulation of research problems.

RPTS 616 Tourism Economics**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Introduction to tourism economics including: tourism consumption and demand analysis; operating and capital budgeting; measurement of economic impacts through input/output analysis; forecasting; project management through PERT/CPM; decision making under uncertainty; benefit/cost analysis.

Prerequisites: RPTS 606 and STAT 651 or approval of instructor.**RPTS 620 Interdisciplinary Seminar in Prevention Science****Credit 1. 1 Lecture Hour.**

Contemporary research programs that represent the interdisciplinary field of prevention science; strengths and limitations of diverse theoretical and conceptual bases of research in prevention science; application of research findings to issues related to the prevention of mental, emotional, and physical health problems and the promotion of well-being. May be taken 3 times for credit.

Prerequisite: Graduate standing and either admission to the interdisciplinary graduate certificate in prevention science program or approval of instructor.**Cross Listing:** COMM 671, HLTH 671 and SPSY 620.**RPTS 626 Social Impacts of Tourism****Credits 3. 3 Lecture Hours.**

Analysis of social, cultural and political impacts associated with travel behavior and tourism development, emphasizing a case study approach; theories and methods for assessing individual, community and organization impacts at local and regional levels; host/guest interactions; evaluation of processes of tourism planning and decision-making; and qualitative and quantitative measures for assessing social impacts.

Prerequisite: RPTS 606 or approval of instructor.

RPTS 636 Philosophy of Social Research**Credits 3. 3 Lecture Hours.**

Overview of the history and development of the philosophy of social science; Relationships science; issues in social research; Sociology of Knowledge; related debates in various disciplines and fields of study. May be taken 3 times for credit.

Prerequisite: Doctoral classification.**RPTS 641 Tourism Experience****Credits 3. 3 Lecture Hours.**

Discusses the theoretical foundations of tourism experiences from an interdisciplinary perspective, including the role of humans, nature/landscapes, built environments and technologies in staging tourism-experiences; draws implications for the design/planning, management and marketing of tourism venues such as events, festivals, museums, hotels/resorts, cruise ships, cities, theme parks as well as websites.

RPTS 646 Heritage Tourism**Credits 3. 3 Lecture Hours.**

Comprises a transdisciplinary examination of contemporary research and practice in heritage tourism and public culture; encourages to deploy a variety of disciplinary outlooks to explore the representation of peoples, places and pasts in a range of settings from the indigenous/sacred to the post industrial/post colonial.

RPTS 654**Credits 4. 4 Lecture Hours.**

Amazon Field School. Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences and solutions to biodiversity loss through ecology, culture and governance.

Cross Listing: VTMI 604 and WFSC 654.**RPTS 655/WFSC 655 Applied Biodiversity Science I****Credits 3. 3 Lecture Hours.**

Students will study in the areas of Conservation genetics, metapopulations, landscape ecology, and ecosystem management.

Prerequisite(s): Graduate classification.**Cross Listing:** WFSC 655/RPTS 655.**RPTS 666 Parks, Tourism and the Natural Environment****Credits 3. 3 Lecture Hours.**

Parks, Tourism and the Natural and Cultural Environment . #Analysis of natural and cultural resource management in the United States; emphasis on federal policy and the influence by political processes at the national, regional, and local levels; case studies to illustrate conceptual and legal frameworks in real world contexts, including the policy and politics of tourism and recreation, endangered species, contested history, and Native American traditions and sovereignty.

Prerequisite: RPTS 602 or approval of instructor.**RPTS 670 Youth Development Programs and Services****Credits 3. 3 Lecture Hours.**

Principles and practices of youth development supports, opportunities, programs and services; emphasis on the role of out-of-school time settings in youth development; programming considerations related to gender, disability and culture; introduction to evaluation and financing of youth development programs.

RPTS 671 Practice and Development of Effective Skills for Youth Development**Credits 3. 3 Lecture Hours.**

Development of skills and competencies needed to successfully manage paid and volunteer staff, design youth programs, address safety and risk management issues; build community support of public, non-profit, and for profit or commercial youth programs and agencies; history and scope of youth serving organizations; programming and staffing strategies; managing, mentoring and training staff; diverse approaches to program curriculum and design; behavior management and recognition of youth participants; youth protection; relevant laws and legal mandates; safety, health and wellness; youth advocacy and engagement; working with parents and community partners; and issues and innovations in youth development.

RPTS 672 Community Based Participatory Research**Credits 3. 3 Lecture Hours.**

Examination of historical and emerging philosophical, ethical and methodological issues; CBPR intersection with race, class, gender and other forms of oppression and critical methodologies; challenges for academics and community members to co-construct knowledge; orientation to democratic processes of social and organizational change; focus on inclusion of youth population in building partnerships; gain practical experience in participatory research methods.

RPTS 674 Administration, Management and Leadership in Youth Programs**Credits 3. 3 Lecture Hours.**

Organizational behavior, administration and management of public, non-profit and for-profit youth programs and agencies; foundations of management and organizational behavior in the context of youth organizations; organizational culture; strategic planning; capacity building; evaluation; marketing and communication; human resource management; financial resource development; budgeting and fiscal management; contemporary issues facing the youth development field.

RPTS 678/RENR 678 Latent Variable Model Applications in the Leisure Sciences**Credits 3. 3 Lecture Hours.**

Introduction to structural equation modeling (SEM); background on conceptual issues, application of the method, and insight on SEM software; measurement theory, missing data analysis, non-normal data, confirmatory factor analysis, path analysis, multi-group models.

Prerequisites: STAT 636 or approval of instructor.**Cross Listing:** RENR 678/RPTS 678.**RPTS 679 Research and Analysis of Issues and Trends in Youth Development****Credits 2. 2 Lecture Hours.**

In-depth examination and analysis of a contemporary issue or trend in youth development from a bioecological systems approach with applications to research and best practices.

RPTS 684 Professional Internship**Credits 1 to 4. 1 to 4 Other Hours.**

Survey and application of principles of recreation and resources development; selected aspects of park and recreation management in professional setting within an approved recreation/park agency under the supervision of a member of the graduate faculty.

RPTS 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Investigations not included in student's research for thesis or dissertation; problems selected in administration or management, recreation or planning.

RPTS 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 9 Lab Hours.**

Selected topics in an identified area of recreation and resources development. May be repeated for credit.

Prerequisite: Approval of department head.**RPTS 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research in recreation and resources development for thesis or dissertation.

RPTS 693 Professional Study**Credits 1 to 9. 1 to 9 Other Hours.**

Approved research or professional paper undertaken as the terminal requirement for the Master of Science Non-Thesis or Natural Resources Development. May be taken more than once, but not to exceed 3 hours credit towards a degree.

Prerequisite: Approval of instructor.

RUSS - Russian

RUSS 692 Readings**Credits 3. 3 Lecture Hours.**

Readings in Russian literary texts in the original language.

Prerequisite: Graduate classification.

SCEN - College of Science

SCEN 600 Science Graduate Study Abroad**Credits 1 to 18. 1 to 18 Other Hours.**

Approved study abroad student participation; reciprocal educational exchange programs. May be taken two times for credit.

Prerequisite: Admission to approved program.**SCEN 677 Science, Technology, Engineering and Mathematics (STEM) Teaching Professional Development****Credit 1. 1 Lecture Hour.**

Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research. Must be taken on satisfactory/unsatisfactory basis.

Prerequisites: Graduate classification and approval of instructor.**Cross Listing:** GEOS 677 and ENGR 677.**SCEN 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of science. May be repeated for credit.

Prerequisites: Graduate classification and approval of instructor.**SCEN 698 Writing for Publication****Credits 3. 3 Lecture Hours.**

Writing in academic disciplines and settings. Writing for different audiences and purposes. Style; planning and development of journal articles; grant proposals; correspondence; oral presentations; technical reports. Permission of departmental/college graduate advisor.

Prerequisite: Advanced standing in master's/doctoral programs.

SCMT - Supply Chain Mgmt

SCMT 610 Business Analytics**Credits 1 to 3. 1 to 3 Lecture Hours.**

Utilization of quantitative tools such as forecasting, optimization and Monte Carlo simulation in order to deal with uncertainties in business and to assist in making better business decisions. May be repeated up to 3 hours credit. Classification 6 students may not enroll in this course.

Prerequisite: Enrollment is limited to MBA students.**SCMT 611 Statistical Foundation of Data Analytics****Credits 3. 3 Lecture Hours.**

Collection, tabulation and presentation of numerical data; sampling, estimation of averages and variation, probability and error, hypothesis testing, linear and logistic regression; practical applications to functional problems in accounting, finance, marketing and management.

SCMT 614 Operations Management**Credits 1 to 3. 1 to 3 Lecture Hours.**

Theory and applications of designing, analyzing and controlling productive systems in the allocation and use of resources to produce goods and services. May be repeated for up to 3 hours credit. Classification 6 students may not enroll in this course.

Prerequisites: SCMT 610 or equivalent; enrollment is limited to MBA students.**SCMT 616 Supply Chain Management****Credits 1 to 3. 1 to 3 Lecture Hours.**

Focus on the integrated management of the total product delivery system; purchasing, inventory management and distribution functions with emphasis on physical and information flows.

Prerequisites: SCMT 614; MBA classification.**SCMT 636 Decision Support Systems****Credits 3. 3 Lecture Hours.**

Use of decision support systems in business-related decision making, business environment, use of models, user interface with decision support systems and decision support systems examples. Classification 6 students may not enroll in this course.

Prerequisite: SCMT 303 or equivalent.**SCMT 637 Modeling and Optimization****Credits 3. 3 Lecture Hours.**

Application of quantitative decision-making techniques to management decision problems; focus on model development, solution and implementation of results with particular emphasis on linear and mixed-integer programming.

SCMT 638 Information Technology in Supply Chain Management**Credits 3. 3 Lecture Hours.**

Review, evaluate, and contribute to the existing knowledge base regarding the management of information flows from automatic identification systems such as RFID.

Prerequisites: ISEN 615 and PhD students or Masters students with a thesis degree plan or approval of instructor.**SCMT 645 Business Process Design****Credits 3. 3 Lecture Hours.**

Introduction to business process design and analysis; tools and techniques to document, analyze and improve business processes; Six Sigma process design and improvement; process metrics; computer simulation of processes; aligning business process with organizational goals and objectives; and case study of real world business problems.

Prerequisites: Graduate classification or approval of instructor; SCMT 614, SCMT 660 or approval of instructor.

SCMT 650 Applied Predictive Analytics for Business**Credits 3. 3 Lecture Hours.**

Develop an understanding of the role of predictive analytics in shaping business outcomes; provide hands-on, practical approach to implementing predictive analytics tools for gaining competitive advantage in business.

Prerequisite: Graduate classification.**SCMT 667 Logistics and Distribution Management****Credits 3. 3 Lecture Hours.**

Contemporary logistics activities including inbound and outbound materials and service flows, with special emphasis on their relationships to the firm's manufacturing function. Classification 6 students may not enroll in this course.

Prerequisite: SCMT 614 or SCMT 660 or equivalent.**SCMT 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed study on selected problems using recent developments in business research methods.

Prerequisites: Approval of instructor and graduate advisor.**SCMT 688 Doctoral Seminar in...****Credits 3. 3 Lecture Hours.**

Evaluation of current research and controversial issues in management information systems, production/operations management or management science. May be repeated for credit five times as content varies. For doctoral students only.

Prerequisite: Approval of department head.**SCMT 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in identified areas of operations and supply chain management.

SCMT 690 Theory of Research in Information and Operations Management**Credits 3. 3 Lecture Hours.**

Design of research and the evaluation of research results using examples from the current research literature. Classification 6 students may not enroll in this course.

Prerequisite: Approval of instructor.**SCMT 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation. Classification 6 students may not enroll in this course.

SCMT 705 Global Operations**Credits 1 to 4. 1 to 4 Lecture Hours.**

Concepts, techniques and tools to design, analyze and improve core operational capabilities; production control; inventory management; quality management; process design; forecasting; product design; facility layout; capacity planning.

Prerequisite: For Master of Science in Business students only.

SCSC - Soil and Crop Sciences

SCSC 603 Cytological and Histological Principles in Plant Breeding**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Modern concepts and recent developments for advanced students in plant and soil sciences and related fields employing microscopic evaluation; specimen preparation, stain technology, theory and use of microscopes, micromanipulators, microtomes, the microtome cryostat, use of equipment in modern cytological research.

Prerequisite: Graduate classification.**SCSC 605 Pedology****Credits 3. 3 Lecture Hours.**

Soil genesis, morphology and classification; development of a working knowledge of soil taxonomy and diagnostic horizons used in placement of soils.

Prerequisites: SCSC 301 or equivalent; or approval of instructor. Two 2-day field trips for which departmental fees may be assessed to cover costs.**SCSC 607 Crop Physiology****Credits 3. 3 Lecture Hours.**

Growth and productivity of major agronomic crops as related to plant physiological processes and environmental parameters, including manipulation of crop growth for enhanced production.

Prerequisites: SCSC 303; MEPS 313.**SCSC 609 Integrated Farming Systems****Credits 3. 3 Lecture Hours.**

System-oriented course that stimulates critical thinking and debate regarding the strength and weakness of modern crop and livestock production systems within the context of ecological and economic sustainability; evaluates conservation tillage, integrated nutrient and pest management and multiple cropping systems.

Prerequisite: Approval of instructor.**SCSC 610 Host Plant Resistance****Credits 3. 3 Lecture Hours.**

Host plant resistance programs from the standpoint of the plant breeder, plant pathologist and entomologist; team taught with each discipline represented; roundtable discussion of assigned readings and lectures.

Prerequisite: Approval of instructor.**Cross Listing:** ENTO 610 and PLPA 610.**SCSC 611 Introduction to Environmental Biophysics****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Theoretical and experimental analysis of interactions between living organisms and their environments; measurement and modeling of the physical environment; measurement and modeling of energy and mass transfer between organisms and their environments, and of organism response to fluxes of mass and energy.

Prerequisites: Graduate classification and approval of instructor.**SCSC 613 Ethical Aspects of International Agricultural Systems****Credits 3. 3 Lecture Hours. 0 Lab Hours.**

Diverse theories of morality; ethical dimensions of population growth, high yielding crop production systems, genetic engineering, and use of land, soil, and water.

Prerequisites: Approval of instructor.**SCSC 615 Reclamation of Drastically Disturbed Lands****Credits 3. 3 Lecture Hours.**

Theoretical and practical aspects of reclamation of lands disturbed during mining of lignite, uranium, phosphorous, oil shale and other minerals and disturbances due to industrial activities; emphasis on physical and chemical characteristics of disturbed materials and their impact on establishment of permanent vegetation.

Prerequisite: SCSC 301 or approval of instructor.**SCSC 618 Analysis of Environmental Systems****Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Classical and contemporary methods for analyzing chemical components of environmental systems, soil, water, plants and gases; environmental chemistry coupled with experiential.

Prerequisite: Graduate classification.

SCSC 619 Molecular Methods for Microbial Characterization**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Underlying principles of molecular methods for microbial detection and characterization in natural and man-made ecosystems; emphasis on method application and data interpretation; emphasis on microbial pathogens and indicator organisms in foods and environment; laboratory covers select protocols.

Prerequisites: SCSC 405; NFSC 326/ANSC 326; POSC 429; approval of instructor.

Cross Listing: NFSC 619, POSC 619 and VTMI 619.

SCSC 620 Brazilian Agriculture and Food Production Systems**Credits 3. 3 Lecture Hours.**

Compare Brazilian and U.S. agriculture and culture related to soil, water, and forest conservation and management in Brazil; tour and learn about Amazon River, rain forest, Brasilia, farm, ranch, and floral production systems, agricultural cooperatives and research, sugar and alcohol production, phosphate mining and production; visit points of interest.

Prerequisite: Approval of instructor.

SCSC 621 International Agricultural Research Centers - MX**Credits 3. 3 Lecture Hours.**

Introduction to international agricultural research, Consultative Group on International Agriculture activity; modern and underdeveloped tropical agricultural systems; introduction to Mexican culture; critical evaluation of complex and international agricultural issues and research programs.

Prerequisites: Approval of instructor; graduate classification.

SCSC 623 Natural Resources and Agricultural Sustainability in UK**Credits 3. 3 Lecture Hours.**

Environmental impacts and sustainability of United Kingdom and U.S. agriculture compared; soil, water, crop, and environmental management; conservation of watersheds; production of hydropower; sustainable use of water resources; cultural immersion.

Prerequisite: Approval of instructor.

SCSC 624 Soil Chemistry**Credits 3. 3 Lecture Hours.**

Chemistry of clay minerals, inorganic solid phases, and organic colloids in soil; mass transfer reactions in soils: absorption/desorption, precipitation/dissolution, gas/liquid phase exchange; principles of soil acidity and salinity; introduction to application of equilibrium concepts in soils.

Prerequisites: SCSC 301 or approval of instructor.

SCSC 625 Biofuels and the Environment**Credits 2. 2 Lecture Hours.**

Biofuel crop use and disposal; production systems; conversion technologies; impacts of bioenergy production on sustainability, environment, and soil and water quality; carbon and energy budgets.

Prerequisite: SCSC 301 or approval of instructor.

SCSC 626 Soil Mineralogy**Credits 3. 3 Lecture Hours.**

Crystal structures and properties of important minerals in soils and sediments especially clay minerals and oxides combined with identification techniques involving theory and practice with x-ray diffraction, electron microscopy, infrared and chemical methods.

SCSC 627 Soil Chemistry and Fertility**Credits 3. 3 Lecture Hours.**

Chemical and biological behavior of nitrogen, phosphorus and potassium in soils; secondary nutrients, micronutrients and soil acidity and liming; interpretation of soil chemical/biochemical research from historical and current literature and relationships with nutrient availability, plant uptake, and environmental quality.

Prerequisites: SCSC 422; MEPS 313.

SCSC 628 Soil Mineralogy Lab**Credits 2. 4 Lab Hours.**

Mineral identification and quantification techniques involving theory and practice with x-ray diffraction, electron microscopy (SEM and TEM). Fourier transform infrared spectroscopy and chemical methods.

Prerequisite: SCSC 626.

SCSC 629/VTMI 629 Laboratory Quality Systems**Credits 3. 3 Lecture Hours.**

Quality systems and method development used within a laboratory; ensuring the integrity of procedures used in lab processes, chain of custody, information management, and international laboratory standards; regulatory requirements for laboratory operation; bio-security precautions; laboratory management.

Cross Listing: VTMI 629/SCSC 629.

SCSC 630/NFSC 630 Cereal Grains for Human Food**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Fundamental concepts of dry milling, wet milling, oil extraction, baking, malting, brewing, storage, sanitation, and quality evaluation and control interrelated with physical and biochemical properties of cereals and their products; use of instruments and techniques to evaluate cereal quality.

Prerequisite: Approval of instructor.

Cross Listing: NFSC 630/SCSC 630.

SCSC 631 Prerequisite Programs for Feed Industry HACCP**Credit 1. 1 Lecture Hour.**

Development of preliminary science-based risk management decision factors in feed industry; understanding and complying with FDA regulatory requirements for animal feed; application of international standards; essential programs for Feed Industry Hazard Analysis and Critical Control Point (HACCP); module one of three.

Prerequisite: Graduate classification.

SCSC 632 Feed Industry HACCP - Principles and Plan Development**Credit 1. 1 Lecture Hour.**

Principles of Feed Industry Hazard Analysis and Critical Control Point (HACCP) plan development; science-based risk analysis of decision factors; regulatory requirements of HACCP; module two of three.

Prerequisite: SCSC 631.

SCSC 633 Feed Industry HACCP - Advanced Plan Development**Credit 1. 1 Lecture Hour.**

Principles of Feed Industry Hazard Analysis and Critical Control Point (HACCP) advanced plan development; case studies of HACCP principles; HACCP plan development for feed industry companies; module three of three.

Prerequisites: SCSC 631 and SCSC 632.

SCSC 634 Regulatory Science Principles**Credits 3. 3 Lecture Hours.**

Regulatory tools, standards and practices to improve the protection and compliance of regulated systems; interdependence of regulatory agencies; models of risk analysis with emphasis on conducting a qualitative and quantitative risk assessment; and implications of compliance.

SCSC 635/AGEC 639 Comparative Global Standards in Food Systems
Credits 3. 3 Lecture Hours.

Laws, regulations and standards governing the production, distribution, processing and marketing of food across regions of the world; international standard setting bodies and risk assessment committees; regulatory equivalency and harmonization; product approval procedures; cost/benefits of global standards and trade agreements.

Cross Listing: AGEC 639/SCSC 635.

SCSC 636 Regulatory Science: Methodology in Food Systems
Credits 3. 3 Lecture Hours.

Risk management methodology including investigation of food and feed firms, conducting internal compliance audits; sample collection, chain-of-custody, trace-back and trace-forward, recalls, label review, data interpretation, risk ranking, resource prioritization, incident command and rapid response.

Prerequisite: SCSC 634.

SCSC 637 Environmental Microbiology
Credits 3. 3 Lecture Hours.

Microbial diversity and interactions in various environments with emphasis on soil and freshwater systems. Molecular methods for detection and characterization of indigenous and introduced microorganisms. Environmental sources and fate of pathogens. Biotechnological applications of environmental microorganisms.

SCSC 638 Hazard Analysis and Preventive Controls for Animal Food
Credits 3. 3 Lecture Hours.

Application of hazard analysis and risk-based preventive controls; Science-based approach to identify and manage hazards in feed ingredients and finished feed; Development of a written food safety plan to protect animal and human health that align with Food and Drug Administration (FDA) rules and regulations and Hazard Analysis and Critical Control Point (HACCP) principles.

SCSC 639 Physiological Basis of Crop Improvement
Credits 3. 3 Lecture Hours.

The underlying physiological basis of past, current and future crop improvement including the associated molecular mechanisms; traits considered include root and shoot architecture, radiation to use efficiency, flowering time, floral development and sex, high density planting tolerance, stress tolerance, crop-microbe interactions and yield.

Prerequisites: SCSC 307 or approval of instructor.

SCSC 640 Intellectual Property in the Plant Sciences
Credits 3. 3 Lecture Hours.

Introduction to major foci of intellectual property (IP) impacting plant sciences, including: 1) traditional vs. emerging knowledge economies, 2) governing statutes and treaties, 3) forms of IP, and 4) IP asset identification, valuation, capture and deployment towards understanding the best practices for IP strategy development and IP portfolio management.

SCSC 641 Plant Breeding I
Credits 3. 3 Lecture Hours.

Theoretical and practical aspects of plant breeding including genetic basis; application of breeding methods and interdisciplinary considerations in breeding problems.

Prerequisites: SCSC 304 or HORT 404/GENE 404; GENE 301; STAT 651.

SCSC 642 Plant Breeding II
Credits 3. 3 Lecture Hours.

Expectations of genetic improvement for different plant breeding methods; relative efficiency for crops of different reproductive mechanisms; genetic variances, covariances and genotype-environment interaction components of variance used in planning selection procedures.

Prerequisites: SCSC 641; GENE 613; STAT 619.

SCSC 643/GENE 643 Molecular Quantitative Genetics and Plant Breeding
Credits 3. 3 Lecture Hours.

Classical, applied and molecular aspects of quantitative genetics in plant breeding; genetic relationships; genetic diversity; genetic phenomena (linkage, heterosis and epistasis); genotype by environment interaction; mapping quantitative trait loci (QTL); genomic and marker-assisted selection; application of statistical software.

Prerequisites: STAT 651, SCSC 642 or GENE 613; or approval of instructor.

Cross Listing: GENE 643/SCSC 643.

SCSC 644 Forage Ecology and Management
Credits 3. 3 Lecture Hours.

Investigation of multidisciplinary approaches toward the development of integrated forage, livestock, and wildlife production systems that are economically feasible and environmentally sustainable.

Prerequisites: Approval of instructor and graduate classification.

SCSC 645/HORT 645 World Agriculture and International Plant Breeding
Credit 1. 1 Lecture Hour.

Evolution of world agriculture; plant breeding and improved varieties; international agricultural research centers and green revolution; population growth; environmental challenges; IPR; role of plant breeding and biotechnology in meeting world food needs.

Prerequisite: SCSC 304, HORT 404/GENE 404 or approval of instructor.

Cross Listing: HORT 645/SCSC 645.

SCSC 646 Advanced Studies in Cotton Fiber Quality and Its Measurements

Credits 3. 3 Lecture Hours.

Advanced studies in cotton fiber quality and its measurement will explore the morphology of cotton fiber growth, the instruments used to determine fiber quality, and the interpretation of quality measurements.

SCSC 650 Mode of Action and Environmental Fate of Herbicides
Credits 3. 2 Lecture Hours. 3 Lab Hours.

Relationships between physical-chemical characteristics of herbicides and their biological activity, selectivity, environmental fate in soil, water, and plants. Laboratory includes practical applications of gas and liquid chromatography, liquid scintillation counting and plant bioassays.

Prerequisite: SCSC 450 or approval of instructor.

SCSC 651 Weed Biology and Ecology
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Fundamentals of weed invasion, development, persistence and competition with agronomic crops; consideration of ecological concepts important to weed-crop relationships as influenced by weed control and other cultural practices. Practical consideration of integrated weed management systems and weed identification.

Prerequisites: SCSC 303; MEPS 313.

SCSC 653 Essentials for Weed Systematic Identification and Management in Agronomy**Credits 3. 3 Lecture Hours.**

Fundamental understanding and hands-on training on the basics of plant weed identification and management; relevant to agronomy, turf, horticulture and rangeland science and vegetation identification and management.

SCSC 654 Analysis of Complex Genomes**Credits 3. 3 Lecture Hours.**

History and current status of genetic and molecular analysis of higher eukaryotic genomes; coverage of techniques for dissection of genomes into manageable parts; investigations in genetics, breeding and evolution; emphasis on quantitative inheritance, genetic mapping, physical mapping, map-based cloning, with examples drawn from a wide range of organisms.

Prerequisite: GENE 603 or GENE 431/BICH 431.**Cross Listing:** GENE 654 and MEPS 654.**SCSC 655 Analysis of Complex Genomes—Lab****Credits 3. 0 Lecture Hours. 7 Lab Hours.**

Analysis of Complex Genomes—Lab. Laboratory methods in molecular genetic techniques for genetic mapping, physical mapping, and map-based cloning of both qualitative and quantitative phenotypes.

Prerequisite: GENE 603 or equivalent or approval of instructor.**Cross Listing:** GENE 655 and MEPS 655.**SCSC 657 Environmental Soil and Water Science****Credits 3. 3 Lecture Hours.**

Discussion of physical, chemical, and biological properties of soil and water and the impact on productivity and sustainability of various ecosystems; application of the knowledge of properties and soil processes to develop and evaluate strategies for protecting and/or improving soil and water quality.

Prerequisite: SCSC 301.**SCSC 658 Watershed Water and Soil Quality Management****Credits 3. 3 Lecture Hours.**

Land use impact on surface and ground water chemistry; legislation impacting water quality; surface and groundwater impairment and restoration; case studies in best management practices.

Prerequisite: Graduate classification.**SCSC 660 Experimental Designs in Agriculture****Credits 3. 3 Lecture Hours.**

Fundamental principles and procedures of experimental designs in agricultural sciences; emphasis includes factorial designs, predicting outputs, use of covariance, balanced and unbalanced experimental designs as related to common agricultural research projects under field, greenhouse or growth chamber culture; familiarization with computer programming of common statistical software.

Prerequisite: STAT 651.**SCSC 663/ESSM 663 Applied Spatial Statistics****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

An introduction to the theory and practice of spatial statistics as applied to the natural resources. Spatial analyses focusing primarily on ordinary kriging, point processes, and lattice data.

Prerequisites: MATH 141, MATH 142, STAT 651, or equivalents; ESSM 651 preferred.**Cross Listing:** ESSM 663/SCSC 663.**SCSC 671/MEPS 671 Plant Growth and Development****Credits 3. 3 Lecture Hours.**

Comprehensive analysis of plant development primarily focused on the molecular and cellular processes underlying morphogenesis, vegetative growth and reproduction; role of the major phytohormones as coordinators of development will be analyzed; plastic developmental responses to conditioning environmental signals.

Prerequisites: MEPS 601 or approval of instructor.**Cross Listing:** MEPS 671/SCSC 671.**SCSC 681 Seminar****Credit 1. 1 Lecture Hour.**

For graduate students and staff members in soils and crops; presentation and discussion of special topics and research data; participation required of all graduate students in agronomy.

SCSC 684 Professional Internship**Credits 1 to 16. 1 to 16 Lecture Hours.**

Program planned to provide professional training in student's particular field of interest. Faculty and employer will supervise the activity.

Prerequisite: Approval of instructor.**SCSC 685 Directed Studies****Credits 1 to 4. 1 to 4 Lecture Hours.**

Advanced problems in some phase of agronomy not directly related to thesis or dissertation.

SCSC 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of agronomy. May be repeated for credit.

Prerequisite: Approval of department head.**SCSC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Investigations leading to thesis or dissertation.

SEFB - Special Ed. Field Based

SEFB 618 Applied Behavior Management in the Classroom**Credits 3. 3 Lecture Hours.**

Field-based course related to effective management of challenging behavior problems in the classroom using proactive classroom strategies, effective instruction and planned behavior interventions; discussion and applications of methods for observing, assessing and analyzing challenging behaviors.

Prerequisites: SPED 609; graduate classification and approval of department head.**SEFB 630 Practicum in Applied Behavior Analysis****Credits 3. 9 Other Hours.**

University-supervised experience related to specializations in special education and behavior analysis. May be taken eight times for credit.

Prerequisites: Graduate classification; SEFB 618; approval of department head.**SEFB 631 Intensive Practicum in Applied Behavior Analysis****Credits 3. 9 Other Hours.**

University-supervised intensive experience related to specializations in special education and behavior analysis. May be taken eight times for credit.

Prerequisites: Graduate classification; SEFB 618; approval of department head.

SEFB 684 Internship in Special Education**Credits 1 to 4. 1 to 16 Other Hours.**

University-directed experience in a professional employment setting; full-time teaching and responsibility in a classroom with students with disabilities. May be taken 4 times.

Prerequisites: Graduate classification and approval of department head.

SENG - Safety Engineering

SENG 655/CHEN 655 Process Safety Engineering**Credits 3. 3 Lecture Hours.**

Applications of engineering principles to process hazards analysis including source and dispersion modeling, emergency relief systems, fire and explosion prevention and mitigation, hazard identification, risk assessment, process safety management, etc.

Prerequisite: Approval of instructor.**Cross Listing:** CHEN 655/SENG 655.**SENG 660 Quantitative Risk Analysis****Credits 3. 3 Lecture Hours.**

Fundamental concepts, techniques, and applications of quantitative risk analysis and risk-informed decision making for all engineering fields; practical uses of probabilistic methods are demonstrated in exercises and case studies from diverse engineering areas.

Prerequisites: Graduate classification.**Cross Listing:** CHEN 660 and ISEN 660.**SENG 670 Industrial Safety Engineering****Credits 3. 3 Lecture Hours.**

General concepts and techniques of safety engineering upon which more detailed and advanced applications may be based; applications of safety engineering principles to industrial and commercial systems; the concept of designing optimally safe systems.

SENG 674 System Safety Engineering**Credits 3. 3 Lecture Hours.**

Current system safety engineering analysis techniques; failure mode and effect and fault tree analysis. Engineering economic analysis is reviewed to develop skills for the safety engineer in presenting alternate solutions to management.

SENG 677 Fire Protection Engineering**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Theory of combustion, characteristics of flammables, fire resistance, fire spread, fire protection principles, public and private fire service organization and equipment; automatic extinguishing systems. Fire protection analysis and design projects.

SENG 680 Industrial Hygiene**Credits 3. 3 Lecture Hours.**

Recognition of environmental stresses present in man-machine-environment systems and the effect of these stresses on human performance, safety and health; chemical, physical, ergonomic and biological exposures, manufacturing systems, materials and operations.

SENG 681 Seminar**Credit 1. 1 Other Hour.**

Formal presentations in industrial hygiene and safety engineering by students and professional industrial representatives.

SENG 684 Professional Internship**Credits 1 to 6. 1 to 6 Other Hours.**

Training under the supervision of practicing engineers in settings appropriate to the student's professional objectives.

Prerequisites: Approval of chair of student's advisory committee and department head.**SENG 685 Directed Studies****Credits 1 to 12. 1 to 12 Other Hours.**

Investigation of topics not within the scope of thesis or dissertation research and not covered by other formal courses.

SENG 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of safety engineering and industrial hygiene. May be repeated for credit.

Prerequisite: Approval of instructor.**SENG 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research in industrial hygiene, safety engineering or related topics for thesis or dissertation.

SOCI - Sociology

SOCI 603/WGST 603 The Contemporary Family**Credits 3. 3 Lecture Hours.**

Review and criticism of theories developed for study of the family; family formation, dynamics, conflicts, power, dissolution; subcultural family forms and responses to social change.

Cross Listing: WGST 603/SOCI 603.**SOCI 604 Comparative Historical Methods****Credits 3. 3 Lecture Hours.**

Surveys key methodological issues, including the logic of comparative design and analysis of primary and secondary sources. Exemplars of important comparative historical research-both classics and more recent publications-will be reviewed.

Prerequisite: Graduate classification.**SOCI 605 Social Movements****Credits 3. 3 Lecture Hours.**

Surveys the literature on social movements including the topics of movement emergence, movement outcomes, state repression, and revolutions; reviews contemporary debates in the theories of social movement and new developments in research.

Prerequisite: Graduate classification.**SOCI 606 War and Democracy****Credits 3. 3 Lecture Hours.**

Sociological approaches to the study of war's effects on democracy and democratic control of the military and the use of force, in comparative-historical context.

SOCI 607 Seminar in Social Organizations**Credits 3. 3 Lecture Hours.**

Relevant conceptual and empirical approaches to the study of selected aspects of social organization. May be taken up to two times for credit as content varies.

Prerequisite: Graduate classification.**SOCI 608 Social Organization****Credits 3. 3 Lecture Hours.**

Theoretical and conceptual bases of patterned human behavior; structural, processual and functional aspects of human groups from simplest informal to the most complex formal types: small groups, associations, institutions, complex organizations, bureaucracies, societies.

SOCI 610/WGST 610 Reproduction, Birth, and Power**Credits 3. 3 Lecture Hours.**

An examination of topics related to reproductive practices, experiences, and ideologies and of the constructed and contested meanings surrounding womanhood, motherhood, sexuality, reproductive freedom, and eugenics.

Prerequisites: Graduate classification.**Cross Listing:** WGST 610/SOCI 610.**SOCI 611 Classical Sociological Theory****Credits 3. 3 Lecture Hours.**

Critical analysis of the writings of the principal founders of modern sociology; Marx, Durkheim and Weber and their influence on current theoretical issues.

Prerequisite: SOCI 430 or equivalent or approval of instructor.**SOCI 615 Contemporary Sociological Theory****Credits 3. 3 Lecture Hours.**

Critical analysis of current sociological perspectives, their logic of inquiry, substantive claims and application to empirical research.

Prerequisite: SOCI 611.**SOCI 616 Political Sociology****Credits 3. 3 Lecture Hours.**

Survey of the principal social and organizational bases of politics; the institutionalization of political power; explanation of political change and movements of social protest.

Prerequisite: Graduate classification or approval of instructor.**SOCI 617 Comparative Racial-Ethnic Relations****Credits 3. 3 Lecture Hours.**

Cross-cultural variations in racial-ethnic relations and structures of inequality; assessment of systems and power-conflict frameworks in diverse settings such as South America, Mexico, South Africa, Caribbean Regions and United States.

Prerequisite: Approval of instructor.**SOCI 618 Sociology of Education****Credits 3. 3 Lecture Hours.**

The school system and the democratic way of life; relationship of education to social organization, social change and social control. Role of education in society.

Prerequisite: SOCI 205.**SOCI 621 Social Psychology****Credits 3. 3 Lecture Hours.**

Personality, social and cultural systems; development and interrelationships; cognitive activities, motivational determinants and selectivity; goals, structures, coordination and related factors influencing complex social groupings.

Prerequisites: SOCI 205; 12 additional hours of social science.**SOCI 622 Social Demography****Credits 3. 3 Lecture Hours.**

Survey of methods, theories and problems of contemporary demographic phenomena.

Prerequisite: Approval of department head.**SOCI 623 Measurement of Sociological Parameters****Credits 3. 3 Lecture Hours.**

Sociological research including scaling, scale analysis and experimental design.

Prerequisites: Graduate classification; three hours of statistics.**SOCI 624 Qualitative Methodology****Credits 3. 3 Lecture Hours.**

Exposure to and critical assessment of qualitative approaches to data gathering in social science; topics include naturalistic observation, field research skills, unobtrusive measures and grounded theory construction.

SOCI 627 Seminar in Law, Deviance and Social Control**Credits 3. 3 Lecture Hours.**

Relevant literature and research in selected aspects of law, deviance and social control. May be taken up to three times for credit as content varies.

Prerequisite: Graduate classification.**SOCI 628 Deviant Behavior****Credits 3. 3 Lecture Hours.**

Contemporary sociological approaches to deviance; theoretical and empirical studies of major types of deviant behavior.

SOCI 629 Sociology of Law**Credits 3. 3 Lecture Hours.**

Critical survey of the social sources of law, the role of law in social organizations and problems of law enforcement.

Prerequisite: Graduate classification.**SOCI 631 Seminar in Sociological Research****Credits 3. 3 Other Hours.**

Critical analysis of research procedures used by sociologists.

Prerequisite: SOCI 623.**SOCI 633 Demographic Methods****Credits 3. 3 Lecture Hours.**

Procedures and techniques for the collection, evaluation and analysis of demographic data; measures of population growth, composition, fertility, mortality and migration.

Prerequisite: SOCI 622.**SOCI 634 Sociology of Community****Credits 3. 3 Lecture Hours.**

Examination of the bases of community, types of communities and the changes faced by communities.

Prerequisites: Graduate classification; approval of instructor.**SOCI 635 Sociology of Complex Organizations****Credits 3. 3 Lecture Hours.**

Comparative structures; contingency models; micro- and macro-theoretical perspectives.

SOCI 640 Sociology of Development**Credits 3. 3 Lecture Hours.**

Survey of sociology of development; review of major classical and contemporary approaches to development including but not limited to modernization theory, world systems theory, comparative nationalism, demographic theories, feminist approaches; contradictions of development including K-Cycles, social movements and ecological constraints.

Prerequisite: Graduate classification or approval of instructor.**SOCI 647 Seminar in Demography and Human Ecology****Credits 3. 3 Lecture Hours.**

Relevant literature and research problems of a selected aspect of demography and human ecology, such as fertility and mortality, migration, international demography. May be taken up to three times for credit as content varies.

Prerequisite: Graduate classification.

SOCI 651 Sociology of Culture**Credits 3. 3 Lecture Hours.**

Theoretical developments and methodological issues relevant to studying culture through classical, modern and postmodern sociological perspectives; includes background concerning the conditions under which theories develop and discussion of controversies in the definition of and research agendas within the sociology of culture.

Prerequisite: Graduate classification.**SOCI 657 Seminar in Culture****Credits 3. 3 Lecture Hours.**

Relevant literature and research in selected aspects of culture and cultural processes. May be taken up to three times for credit as content varies.

Prerequisite: Approval of instructor.**SOCI 660 Theories of Race and Ethnic Group Relations****Credits 3. 3 Lecture Hours.**

Sociological theories of intergroup assimilation, conflict and adaptation; includes examination and analysis of three major contemporary perspectives; assimilation and social fusion theory, conflict models and models of ethnic pluralism; theories of melioration of social discrimination also examined.

Prerequisite: Graduate classification.**SOCI 661/WGST 661 Sociology of Gender****Credits 3. 3 Lecture Hours.**

Overview of the Sociology of Gender; historical development, primary concepts, contemporary issues, theory, methods, and applications.

Prerequisite: Graduate classification.**Cross Listing:** WGST 661/SOCI 661.**SOCI 662 Racism and Anti-Racism****Credits 3. 3 Lecture Hours.**

This seminar focuses on racism and anti-racism issues, including social science research on slavery, anti-Black discrimination and Black resistance, anti-Asian discrimination and Asian American resistance, anti-Latino discrimination and Latino resistance, and white anti-racist groups. We assess empirical research on these topics and explore important theoretical frameworks.

Prerequisite: Graduate classification.**SOCI 663 Black and Latino Americans****Credits 3. 3 Lecture Hours.**

This seminar focuses social science theory and research about African Americans and Latinos. We will emphasize historical backgrounds, social science theories applied to these groups, patterns of immigration, cognitive framing, patterns of racial-ethnic discrimination, and racial/class/gender intersections. We will review critically important research books dealing with these and related U.S. racial-ethnic issues.

Prerequisite: Graduate classification.**SOCI 664 Racial and Ethnic Identity and Identification Seminar****Credits 3. 3 Other Hours.**

Seminar exploring social science research on racial and ethnic identification and identities; includes the construction of racial and ethnic identities, identity development, the measurement of racial and ethnic identities and identification, intersecting identities, debates about the future of racial and ethnic identities and categories.

Prerequisite: Graduate classification or approval of instructor.**SOCI 666 Black Feminist Theory and Intersectionality****Credits 3. 3 Lecture Hours.**

Historical overview of development of Black Feminist Theory and the Intersectional approach to understanding race, class and gender as a social matrix; exploration of interactive approach to social structure and social identity.

Prerequisite: Graduate classification or approval of instructor.**SOCI 667 Seminar in Race and Ethnic Relations****Credits 3. 3 Lecture Hours.**

Origins, extent, consequences of racial and ethnic differences on key demographic variables such as fertility, mortality, migration and population size, growth, distribution and composition; how demographic variables affect and are affected by racial and ethnic differences in family structure, social mobility and socioeconomic stratification. May be taken up to three times for credit as content varies.

Prerequisite: Graduate classification.**SOCI 676 Theory Construction****Credits 3. 3 Lecture Hours.**

Examination of issues on the philosophy of science and their relationship to the development of social science theory, particularly in sociology; students develop and apply theory construction principles to their own research agendas.

Prerequisite: Graduate classification.**SOCI 677 Seminar in Social Psychology****Credits 3. 3 Lecture Hours.**

Relevant literature and research problems of a selected aspect of social psychology. May be taken for credit up to three times as content varies.

Prerequisite: Graduate classification.**SOCI 680 Teaching Undergraduate Sociology: Overview of Principles and Practices****Credits 3. 3 Lecture Hours.**

Basic understanding of the principles and practices of effective undergraduate teaching and learning, skills enhanced by experience and collaboration; preparation for teaching and documenting teaching philosophy, skills and experience in the form of a teaching portfolio.

SOCI 681 Professional Seminar in Sociology**Credits 0-1. 0-1 Other Hours.**

Provides socialization to the profession of sociology; focuses on the role of the graduate student in sociology departments and other areas of professionalization; systematically introduces students to faculty members and their work; and provides instruction on how to write and publish research. Repeatable to 6 hours total.

SOCI 682 Grant Writing for the Social Sciences**Credits 3. 3 Lecture Hours.**

Professional proposal and grant writing; best writing practices, writing and developing competitive grant and fellowship proposals, and peer reviewing and editing; production of a well-written, competitive grant or fellowship proposal for submission.

Prerequisite: Graduate classification or approval of instructor.**SOCI 683 Professional Writing and Publication****Credits 3. 3 Lecture Hours.**

Instruction in professional writing skills, socialization in academic publishing and peer review. Must have a completed paper ready to be work-shopped and revised.

Prerequisite: Graduate classification in Sociology.

SOCI 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problem in field of sociology.

Prerequisite: Approval of instructor.**SOCI 687 Seminar in Rural Sociology****Credits 3. 3 Lecture Hours.**

Develop sociological understanding of agriculture and natural resources; includes people involved in production, rural communities and agribusiness; focus on causes of social change and social organizations in agriculture and consequences. May be taken up to three times for credit as content varies.

Prerequisite: Graduate classification.**SOCI 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of sociology. May be repeated for credit.

SOCI 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Initiation and completion of research project of approved scope for an advanced degree.

Prerequisite: Approval of instructor.

SOPH - School of Public Health

SOPH 601 Thinking in Populations: The Public Health Mindset**Credits 2. 2 Lecture Hours.**

Intensive case-focused immersion in the distinctive features of public health practice; mindset and foundations for defining population health status, addressing complex population health issues and leading protection and improvement of health at the population level; the first of four courses that comprise the MPH core required for all MPH students.

Prerequisites: SOPH 602 and SOPH 603, or concurrent enrollment.**SOPH 602 Investigation and Control: Acute Public Health Events****Credits 3. 3 Lecture Hours.**

Case-focused, applied study in investigating and responding to acute outbreaks, exposures, disasters or other events that threaten the health of the public; identification and diagnosis of acute public health events, definition of contributing factors, collection and analysis of data, assessment of causality and mapping of logic for mediation, control and prevention; the second of four courses that comprise the MPH core required for all MPH students.

Prerequisites: SOPH 601 and SOPH 603, or concurrent enrollment.**SOPH 603 Assessment and Intervention: Wicked Problems in Public Health****Credits 3. 3 Lecture Hours.**

Case-focused, applied study in assessing and intervening in wicked population health problems (multi-faceted, multi-sectoral, large scale public health challenges characterized by scientific uncertainty); unpacking the multiple causes and determinants of a complex problem in affected populations; identification, selection and justification of potential interventions and/or policies; description of methods and measures for assurance and evaluation; the third of four courses that comprise the MPH core required for all MPH students.

Prerequisites: SOPH 601 and SOPH 602, or concurrent enrollment.**SOPH 604 Framing and Persuasion: Public Health in the Public Sphere****Credit 1. 1 Lecture Hour.**

Intensive, case-focused application of foundational public health knowledge and core competencies to a current population health problem; synthesis of evidence from a variety of sources; development and communication of public health content to inform and influence policy formation; demonstration of leadership for effective public health practice; the fourth of four courses that comprise the MPH core required for all MPH students.

Prerequisites: SOPH 601, SOPH 602, and SOPH 603.**SOPH 670 Global Public Health Systems and Practice Experiences****Credits 3. 3 Other Hours.**

Study abroad experiences led by School of Public Health faculty in select countries; lectures prior to departing and lectures and classes in country; engage in public health practice and research activities in country; visit public health agencies and programs in country. May be repeated for credit.

Prerequisites: Graduate classification; approval of instructor.**SOPH 676 Professional Development Seminar in Public Health Teaching****Credit 1. 1 Lecture Hour.**

Course development, delivery, assessment skills within public health context.

Prerequisite: Graduate classification.**SOPH 680 Public Health Capstone****Credits 3. 3 Lecture Hours.**

Integration of knowledge and skills gained through other courses and experiences at SPH allowing an understanding of both the overall public health problem-solving approach and the contributions of each discipline to that approach; working in groups to analyze public health problems and develop interventions. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisites: Four of the five SPH core courses (PHEB 600, PHEB 602, PHEO 600, PHPM 605, HPCH 603) are prerequisites for this class, and the fifth core course may be taken concurrently; approval of instructor.**SOPH 689 Special Topics In...****Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of public health. May be repeated for credit.

Prerequisite: Approval of instructor.

SPED - Special Education

SPED 601 Assessment in School Settings**Credits 3. 3 Lecture Hours.**

Formal and informal assessment; state assessment and alternatives; techniques used with students with disabilities; using data to make educational decisions.

Prerequisite: SPED 617 and SPED 699; graduate classification; approval of department head; approval of instructor.**SPED 602 Ethics and Professional Conduct in Special Education and Applied Behavior Analysis****Credits 3. 3 Lecture Hours.**

Focus on ethical and professional conduct required for special educators and behavior analysts; information required for certified behavior analysts; ethics required by the Behavior Analyst Certification Board; highly relevant for those working with children or adults with disabilities in any capacity.

Prerequisites: SPED 620 and SPED 632 or approval of department head; graduate classification.

SPED 603 Foundations of Special Education**Credits 3. 3 Lecture Hours.**

Build a knowledge base to understand the historical and conceptual foundations of special education; familiarization with special education literature; overview of current issues and trends impacting special education.

Prerequisites: Graduate classification or approval of instructor; approval of department head.

SPED 609 Educating Individuals with Autism Spectrum Disorders**Credits 3. 3 Lecture Hours.**

Study of the incidence, prevalence, and characteristics of individuals with autism spectrum disorders, particularly for teachers, counselors, and related fields; research and best practices in assessment, treatment, and education; includes treatment of social, communication, academic, and behavior deficits with emphasis on behavior analysis.

Prerequisites: SPED 628; graduate classification.

SPED 610 Special Education and the Family**Credits 3. 3 Lecture Hours.**

Overview of issues in special education interpreted within the context of the family; relationships among the school, the families, and the community; impact of relationships on service provisions; field experiences working with families with special needs.

Prerequisite: Approval of department head.

SPED 611 Multicultural Special Education**Credits 3. 3 Lecture Hours.**

Multicultural perspectives in special education; foundations of multicultural special education; cultural responsive teaching; methods for teaching culturally and linguistically diverse learners in special education.

Prerequisite: Graduate classification.

SPED 612 Special Education Law and Policy**Credits 3. 7 Lab Hours.**

Legal development of the discipline of special education; current requirements for providing free and appropriate education to students with disabilities; assessment and performance of research with legal information.

Prerequisites: Graduate classification and approval of department head.

SPED 614 Issues in Moderate and Severe Disabilities**Credits 3. 3 Lecture Hours.**

Psychological, social, physical and cognitive aspects of moderate to severe disabilities; service delivery systems; biomedical issues community programming; transition programming; adult service program; programs for the elderly; all in relation to individuals with moderate to severe disabilities.

Prerequisites: Graduate classification and approval of department head.

SPED 615 Special Education Assessment: Technical and Legal Aspects**Credits 3. 3 Lecture Hours.**

Teaches skills to critically examine assessment tools and procedures in special education; technical and legal issues in pre-referral evaluation, eligibility assessment, IEP writing and program evaluation; emphasizes test validity and test sensitivity to growth; mastery of knowledge base and realistic scenarios.

Prerequisites: Graduate classification or approval of instructor; approval of department head.

SPED 617 Adolescent Literacy for Students with Diverse Instructional Needs**Credits 3. 3 Lecture Hours.**

Research-based strategies to teach reading and writing to 4th through 12th grade students with disabilities and other diverse instructional needs; emphasis on current issues, assessment, motivation, intervention, and content area issues and strategies.

Prerequisites: SEFB 618 and SPED 630; graduate classification.

SPED 618 Preparation for the Professoriate in Special Education and Allied Fields**Credits 3. 3 Lecture Hours.**

Orientation to full time doctoral studies; understanding of historical and contemporary issues in the field of special education and allied fields; considers roles and expectations of university faculty; application of systematic reviews of experimental research in special education and allied fields.

Prerequisite: Admission into a CEHD doctoral program.

SPED 619 Critical Research and Practice Issues in Special Education**Credits 3. 3 Lecture Hours.**

Examination of the historical, conceptual/theoretical and empirical basis of special education research and practice; understanding special education as a field and specific areas for in-depth knowledge.

Prerequisite: Admission into special education doctoral program.

SPED 620 Bilingual Special Education**Credits 3. 3 Lecture Hours.**

Topics concerning bilingual special education including history of the field, language acquisition, learning disabilities and language differences, assessment, policy development, individualized education plans, instructional strategies and parental involvement.

Prerequisite: Approval of department head.

SPED 621 Overview of Exceptional Students**Credits 3. 3 Lecture Hours.**

Overview of historical foundations for special education practice; definitions of disabilities, relevant educational characteristics of students with disabilities; assessment procedures associated with the identification of students' disabilities; intervention procedures related to education of students with disabilities.

Prerequisites: Graduate classification or approval of department head.

SPED 623 Self-Determination and Advocacy**Credits 3. 3 Lecture Hours.**

Conceptualization and theoretical framework of self-determination for students with disabilities; the role of self-determination in improving student outcomes; and best practices in promoting self-determination among students with disabilities.

Prerequisites: Graduate classification.

SPED 624 Professional Development in Research**Credits 3. 3 Lecture Hours.**

Development and refinement of skills needed to be productive scholars with particular focus on disseminating research through manuscript preparation and conference presentations.

Prerequisites: SPED 618; SPED 619; Graduate classification; approval of department head.

SPED 626 Meta-Analysis in Single-case Research**Credits 3. 3 Lecture Hours.**

Steps of conducting a meta-analysis of single-case research studies.

Prerequisites: Doctoral classification; approval of instructor.

SPED 628 Consultation in Special Education**Credits 3. 3 Lecture Hours.**

Rationale, strategies, procedures and resources for providing consultation as systematic problem-solving to school procedures, and resources for improving services for children with disabilities, and those who are at-risk of school failure.

Prerequisites: Graduate classification and approval of department head.

SPED 630 Early Literacy for Students with Diverse Instructional Needs**Credits 3. 3 Lecture Hours.**

Research-based strategies to teach beginning reading and writing to pre-K through 4th grade students with disabilities and other diverse instructional needs; emphasis on current issues, assessment, prevention and intervention.

Prerequisite: Graduate classification.

SPED 632 Transition Education and Services for Individuals with Disabilities**Credits 3. 3 Lecture Hours.**

Current issues and practices related to the transition of students from school to adulthood; foundations of life-long transitions; assessment of post-school goals and identification of effective transition services to promote employment, postsecondary education, and community living; partnerships with parents and service providers.

Prerequisite: Graduate classification.

SPED 641 Low-Incidence Instruction for Individuals with Significant Support Needs**Credits 3. 3 Lecture Hours.**

Examination of how particular types of low-incidence disabilities; including mental retardation, autism, physical disabilities, traumatic brain injury, deafness, blindness, multiple disabilities, and other health impairments, affect academic and job performance. Current methods for teaching individuals with low-incidence disabilities, including an overview of Adaptive/Assistive Technology (AT) solutions.

Prerequisites: Graduate classification and approval of department head.

SPED 642 Prevention, Support, and Intervention for Students with Emotional and Behavior Problems**Credits 3. 3 Lecture Hours.**

Effective management of challenging and severe behavior problems in education, clinic and community settings using prevention, targeted programming and individual interventions; includes methods for observing, assessing and analyzing challenging and severe behaviors.

Prerequisites: Graduate classification and approval of department head.

SPED 683 Field Practicum**Credits 1 to 15. 1 to 15 Other Hours.**

Faculty supervised experience in professional practice settings in Special Education. May be repeated for credit.

Prerequisite: Approval of instructor and department head.

SPED 684 Professional Internship.**Credits 1 to 6. 1 to 6 Other Hours.**

Supervised experience in professional functions appropriate to career goals in special education.

Prerequisite: Approval of instructor and department head.

SPED 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Directed individual study of selected problems in special education.

Prerequisite: Approval of instructor and department head.

SPED 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of special education. May be repeated for credit.

Prerequisite: Approval of department head.

SPED 699 Advanced Applied Behavior Analysis**Credits 3. 3 Lecture Hours.**

Rigorous repertoire of knowledge and skill in behavior analysis; comprehensive and contemporary description of applied behavior analysis; application of principles and paradigms of theoretical and experimental aspects of behavior.

Prerequisites: SEFB 618 and graduate classification.

SPMT - Sport Management

SPMT 601 Research Methods for Sport Organizations**Credits 3. 3 Lecture Hours.**

Methodology and application of social science research in sport organizations, including the research process, research designs, sampling procedures, measurement, survey research, hypothesis testing, descriptive analyses and the research presentation.

Prerequisite: Graduate classification.

SPMT 610 Management of Sport Organizations**Credits 3. 3 Lecture Hours.**

Examines an encompassing perspective of sport organization management with an emphasis on contemporary management theory and organizational theory, leading sport organizations and topics related to organizational behavior.

Prerequisite: Graduate classification.

SPMT 611 Financial Management in Sport**Credits 3. 3 Lecture Hours.**

Focuses on financial issues that impact the sport industry, including ownership structures, venue financing, franchise valuation, risk, taxes and time value of money principles and application as they relate to investments, labor and media contracts.

Prerequisites: Graduate classification.

SPMT 612 Personnel Management in Sport**Credits 3. 3 Lecture Hours.**

Examine the service orientation of sport organizations, individual differences in employees and clients, personnel management practices, and expected outcomes of effective personnel management.

Prerequisite: Graduate classification.

SPMT 613 Diversity and Ethics of Managing Sport Organizations**Credits 3. 3 Lecture Hours.**

Examines an encompassing perspective of diversity and ethics in the management of sport; foundational ethical theories; understanding of various ways in which people differ and strategies for creating inclusive sport organizations; emphasis on race, gender, mental and physical ability, religious beliefs, sexual orientation, gender identity and gender expression, and social class.

Prerequisite: Graduate classification.

SPMT 615 Sport Marketing**Credits 3. 3 Lecture Hours.**

Broad and contemporary overview of the sport marketing discipline including the marketing mix, segmentation, consumer behavior, sport sponsorship, advertising and branding.

Prerequisite: Graduate classification.

SPMT 616 Sales and Revenue Generation in Sport**Credits 3. 3 Lecture Hours.**

Examination of the managerial and practical sales skills needed for a successful career in sport industry sales; emphasis on revenue production, effective and ethical communication with target customers, relationship management, and direct and indirect sales techniques and strategies.

Prerequisite: Graduate classification.**SPMT 617 Communications and Media in Sport****Credits 3. 3 Lecture Hours.**

Examination of the relationship between media and the sport industry; focus on media relations, sport media management, broadcasting, public relations, social media, media platforms and channels within the sport industry.

Prerequisite: Graduate classification.**SPMT 623 Athletics Administration****Credits 3. 3 Lecture Hours.**

Principles and processes of managing intercollegiate athletic organizations and properties.

Prerequisite: Graduate classification.**SPMT 630 Economic Issues in Sport****Credits 3. 3 Lecture Hours.**

Economics of North American professional sport; supply and demand; market for broadcast rights; league structure; market power; revenue distribution mechanisms; market for playing talent.

Prerequisite: Graduate classification.**SPMT 640 Psychology for Coaches****Credits 3. 3 Lecture Hours.**

Examination of the basic principals of sport psychology regarding coaching; includes personal assessment, motivation, handling adversity, leadership and communication.

Prerequisite: Graduate classification.**SPMT 642 Best Practices in Coaching****Credits 3. 3 Lecture Hours.**

Examination of the practical application of coaching; targeting the principles of coaching philosophy, coaching style and character development; tools to manage the total program from player personnel to coaching staff.

Prerequisite: Graduate classification or enrollment in certificate.**SPMT 646 Ethics in Coaching****Credits 3. 3 Lecture Hours.**

Focuses on the ethical, moral, legal and social issues associated with coaching sports; includes history and development of sport; the role, duties and virtues associated with coaching; evaluating 'successful' coaching; developing coaching philosophy; treatment of players and opponents; coaching younger players; compliance; gender equity and safety.

Prerequisite: Graduate classification; or enrolled in certificate.**SPMT 655 Sport Law****Credits 3. 3 Lecture Hours.**

Legal principles affecting sponsors and users of sports programs; liability concepts in tort, contract, civil rights and property law in program planning, development, marketing and management.

Prerequisite: Graduate classification or approval of instructor.**SPMT 660 Compliance in Intercollegiate Athletics****Credits 3. 3 Lecture Hours.**

Investigation of the principles and processes of an intercollegiate athletic compliance office; focus on historical perspective, NCAA governance, NCAA infractions and NCAA bylaws.

Prerequisites: Graduate classification.**SPMT 681 Seminar****Credit 1. 1 Lecture Hour.**

Reports and discussions of research and the research process in sport management. May be taken 4 times for credit.

Prerequisite: Graduate classification.**SPMT 682 Seminar in...****Credit 1. 1 Lecture Hour.**

Discussions of current topics and issues impacting sport management and administration. May be taken 8 times for credit.

Prerequisite: Graduate classification.**SPMT 683 Practicum in Sport Management****Credits 3. 3 Lecture Hours.**

Participation and study in sport management and administration; acquisition and practice of professional and/or clinical skills in sport management.

Prerequisites: Graduate classification and approval of instructor.**SPMT 684 Internship in Sport Management****Credits 1 to 6. 1 to 6 Lecture Hours.**

Supervised internship with sport management organization; application of formal training to performing professional functions consistent with career goals.

Prerequisites: Graduate classification; approval of instructor.**SPMT 685 Directed Studies****Credits 1 to 12. 1 to 12 Lecture Hours.**

Directed study of special problems in sport management not related to thesis. May be repeated for credit.

Prerequisites: Graduate classification; approval of instructor; approval of department head.**SPMT 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

.. Selected topics in an identified area of sport management. May be repeated for credit.

Prerequisite: Graduate classification.**SPMT 690 Theory of Research in Sport Management****Credits 3. 3 Lecture Hours.**

Examination of basic statistical techniques used in sport management research; emphasis on developing a working knowledge of basic statistics, what statistics to incorporate given certain research questions and basic knowledge and understanding of data and simple data analyses. Must be taken on a satisfactory/unsatisfactory basis only.

Prerequisite: Graduate classification.**SPMT 691 Research****Credits 1 to 18. 1 to 18 Other Hours.**

Research for thesis or dissertation.

Prerequisites: Graduate classification and approval of committee chair.

SPSY - School Psychology

SPSY 610 Child Psychopathology

Credits 3. 3 Lecture Hours.

Major forms of psychopathology and behavioral disorders in children and adolescents; concepts of child psychological disorders; application of multiple theoretical models; understanding of the development context in which these orders exist.

Prerequisites: Graduate classification; approval of department head.

SPSY 611 Introduction to School Psychology: Legal, Ethical and Credentialing Issues in School Psychology

Credit 1. 1 Lecture Hour.

History of professional psychology with emphasis on school psychology; legal, ethical and credentialing issues in psychology; scholarly writing; models of providing clinical child and special educational services. May be taken up to three times for credit.

Prerequisite: Graduate classification; approval of department head.

SPSY 612 Individual Assessment of Children's Intelligence

Credits 4. 3 Lecture Hours. 2 Lab Hours.

Individual Assessment of Children's Intelligence. Educational and clinical applications of individual assessment; diagnostic measures of intelligence, achievement, language and perception; videotaping of student test administration is required for purposes of supervision and self-evaluation. Limited to 12 students per semester.

Prerequisites: Approval of instructor; approval of department head.

SPSY 613 Crisis Intervention in the Schools

Credits 3. 3 Lecture Hours.

Fundamentals of school-based crisis intervention; emphasis on personal and situational crises, and the development and implementation of crisis intervention and prevention plans within the school setting; differing models of crisis intervention, models of coping with crisis and critical incidents, and the efficacy of crisis intervention.

Prerequisite: Graduate classification.

SPSY 614 Integrated Assessment Practicum

Credits 3. 1 Lecture Hour. 6 Lab Hours.

Student test administration competencies and a minimum of 150 hours of supervised experience in administration, analysis and reporting of individual diagnostic instruments.

Prerequisites: SPSY 612 and SPSY 617.

SPSY 615 Preschool Assessment

Credits 3. 3 Lecture Hours.

Assessment of infants and young children (birth to 5 years of age); requires extension of the diagnostic skills gained in other coursework to applications for early intervention and child find with younger children; measures/methods will include norm-referenced, criterion referenced, and play-based/observational methods used in the assessment of infants and young children.

Prerequisites: SPSY 612 and approval of instructor.

SPSY 617 Emotional Disturbance in Children

Credits 3. 3 Lecture Hours.

Diagnostic procedures and techniques in personality assessment and identification of emotionally disturbed children and youth.

Prerequisite: SPSY 610; SPSY 612; SPSY 642.

SPSY 620 Interdisciplinary Seminar in Prevention Science

Credit 1. 1 Lecture Hour.

Contemporary research programs that represent the interdisciplinary field of prevention science; strengths and limitations of diverse theoretical and conceptual bases of research in prevention science; application of research findings to issues related to the prevention of mental, emotional, and physical health problems and the promotion of well-being. May be taken 3 times for credit.

Prerequisite: Graduate classification and enrollment in the interdisciplinary graduate certificate in prevention science or approval of instructor.

Cross Listing: COMM 671, HLTH 671 and RPTS 620.

SPSY 627 Culturally Responsive Interventions: Models for Making Cultural Adaptations to Interventions

Credits 3. 3 Lecture Hours.

Introduction to literature that demonstrates the need to adapt evidence-based interventions for use with culturally and linguistically diverse populations; different models for making cultural adaptations; identify ways to ensure fidelity and integrity of interventions even after cultural adaptations are made; adaptations for populations with diverse home culture, language, race, sexual orientation, developmental abilities or SES.

Prerequisites: Graduate classification or approval of advisor.

SPSY 628 Consultation: Theory and Techniques

Credits 3. 3 Lecture Hours.

History and theory of various models of consultation including mental health, behavioral and organizational development; skills and techniques necessary for effective consultation; relevant research issues.

Prerequisites: Approval of department head; graduate classification.

SPSY 638 Systems Consultation and Prevention Science

Credits 3. 3 Lecture Hours.

Theory, research and practice in prevention science with an emphasis on individuals from birth to age 21; understanding and application of theories and methods of prevention science.

Prerequisite: Approval of department head; graduate classification.

SPSY 641 Child Therapy for School Behavior Problems

Credits 3. 3 Lecture Hours.

Selected therapy approaches for treating childhood behavior disorders that interfere with children's interpersonal and intrapersonal adjustment and school learning; play therapy, behavior therapy, cognitive therapies; case studies; observation of therapy cases in public and/or mental health settings.

Prerequisites: SPSY 610; approval of department head.

SPSY 642 Behavioral Assessment and Intervention

Credits 3. 3 Lecture Hours.

Overview of contemporary behavior theory and applied behavior analysis; overview of behavioral assessment strategies with an emphasis on the systematic observations of behavior and interviews; and contemporary behavior therapy approaches for use with educators, children, and their families.

Prerequisite: Graduate classification and approval of department head.

SPSY 643 Academic Assessment and Intervention**Credits 3. 3 Lecture Hours.**

Developing effective and appropriate interventions for school-based academic concerns; collecting and interpreting data from informal academic assessments and observations for intervention development and evaluation; using curriculum-based assessments for monitoring student's academic programs and teacher decision making; understanding effective instructional strategies and their application to academic interventions.

Prerequisite: Graduate classification and approval of department head.**SPSY 644 Child Therapy: Advanced Theory and Techniques****Credits 3. 3 Lecture Hours.**

Supervised experiences in public and mental health settings in the application of psychotherapy techniques with children, adolescents and families; interviewing techniques; process of therapy; advanced theoretical foundations; case management.

Prerequisites: SPSY 641 and approval of department head.**SPSY 645 Social and Emotional Development and Intervention****Credits 3. 3 Lecture Hours.**

Theories of how children develop in the areas of social and emotional learning, recent empirical findings in the area of social and emotional development; preventive and remedial interventions for social and emotional difficulties.

Prerequisites: Graduate classification; approval of department head.**SPSY 657 Bilingual Psychoeducational Assessment****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Theory of second language acquisition; discrete point and descriptive approach to language assessment; achievement assessment; cognitive assessment and practical and cultural factors when assessing bilingual children.

Prerequisites: SPSY 612; approval of department head.**SPSY 682 School-Based Externship****Credits 3 to 6. 3 to 6 Other Hours.**

Application of knowledge and skills obtained through coursework including assessment for intervention; direct interventions such as counseling and behavior management; indirect services such as consultation, in-service, program evaluation; includes a variety of school psychologist activities with children with and without disabilities of all ages; activities occur under the supervision of field and university supervisors.

Prerequisites: Graduate classification; SPSY major; approval of department head; approval of course instructor.**SPSY 683 Field Experience/Externship in School Psychology****Credits 1 to 15. 1 to 15 Other Hours.**

Faculty supervised experience in professional employment public and mental settings in school psychology. May be taken up to 30 hours.

Prerequisite: Approval of instructor and department head.**SPSY 684 Professional Internship****Credits 1 to 4. 1 to 4 Other Hours.**

Limited to advanced doctoral students; faculty supervised experience in approved professional employment settings. Applications for September assignments must be approved the previous October. May be repeated up to 9 hours.

Prerequisites: Completion of required substantive coursework; approval of instructor and department head.**SPSY 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems.

Prerequisite: Approval of department head.**SPSY 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of school psychology. May be repeated for credit.

Prerequisite: Approval of department head.**SPSY 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Approval of department head.

STAT - Statistics

STAT 601 Statistical Analysis**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

For students in engineering, physical and mathematical sciences. Introduction to probability, probability distributions and statistical inference; hypotheses testing; introduction to methods of analysis such as tests of independence, regression, analysis of variance with some consideration of planned experimentation.

Prerequisite: MATH 152 or MATH 172.**STAT 604 Topics in Statistical Computations****Credits 3. 3 Lecture Hours.**

Efficient uses of existing statistical computer programs (SAS, R, etc.); generation of random numbers; using and creating functions and subroutines; statistical graphics; programming of simulation studies; and data management issues.

Prerequisite: MATH 221, MATH 251, or MATH 253.**STAT 605 Advanced Statistical Computations****Credits 3. 3 Lecture Hours.**

Programming languages, statistical software and computing environments; development of programming skills using modern methodologies; data extraction and code management; interfacing lower-level languages with data analysis software; simulation; MC integration; MC-MC procedures; permutation tests; bootstrapping.

Prerequisite: STAT 612 and STAT 648.**STAT 607 Sampling****Credits 3. 3 Lecture Hours.**

Planning, execution and analysis of sampling from finite populations; simple, stratified, multistage and systematic sampling; ratio estimates.

Prerequisite: STAT 601 or STAT 652 or concurrent enrollment in STAT 641.**STAT 608 Regression Analysis****Credits 3. 3 Lecture Hours.**

Multiple, curvilinear, nonlinear, robust, logistic and principal components regression analysis; regression diagnostics, transformations, analysis of covariance.

Prerequisite: STAT 601 or STAT 641.**STAT 610 Theory of Statistics - Distribution Theory****Credits 3. 3 Lecture Hours.**

Brief introduction to probability theory; distributions and expectations of random variables, transformations of random variables and order statistics; generating functions and basic limit concepts.

Prerequisite: MATH 409 or concurrent enrollment in MATH 409.**STAT 611 Theory of Statistics - Inference****Credits 3. 3 Lecture Hours.**

Theory of estimation and hypothesis testing; point estimation, interval estimation, sufficient statistics, decision theory, most powerful tests, likelihood ratio tests, chi-square tests.

Prerequisite: STAT 610 or equivalent.

STAT 612 Theory of Linear Models**Credits 3. 3 Lecture Hours.**

Matrix algebra for statisticians; Gauss-Markov theorem; estimability; estimation subject to linear restrictions; multivariate normal distribution; distribution of quadratic forms; inferences for linear models; theory of multiple regression and AOV; random and mixed-effects models.

Prerequisite: Course in linear algebra.**STAT 613 Statistical Methodology I****Credits 3. 3 Lecture Hours.**

Elements of likelihood inference; exponential family models; group transformation models; survival data; missing data; estimation and hypotheses testing; nonlinear regression models; conditional and marginal inferences; complex models-Markov chains, Markov random fields, time series, and point processes.

Prerequisite: STAT 612.**STAT 614 Probability for Statistics****Credits 3. 3 Lecture Hours.**

Probability and measures; expectation and integrals, Kolmogorov's extension theorem; Fubini's theorem; inequalities; uniform integrability; conditional expectation; laws of large numbers; central limit theorems

Prerequisite: STAT 610 or its equivalent.**STAT 615 Stochastic Processes****Credits 3. 3 Lecture Hours.**

Survey of the theory of stochastic processes; includes countable-state Markov processes, birth-death processes, Poisson point processes, renewal processes, Brownian motion and diffusion processes and covariance-stationary processes; theoretical development and applications to real world problems.

Prerequisites: STAT 610; MATH 409.**STAT 616 Statistical Aspects of Machine Learning I: Classical Multivariate Methods****Credits 3. 3 Lecture Hours.**

Core methods from traditional multivariate analysis and various extensions; probability distributions of random vectors and matrices, multivariate normal distributions, model assessment and selection in multiple regression, multivariate regression, dimension reduction, linear discriminant analysis, logistic discriminant analysis, cluster analysis, multidimensional scaling and distance geometry, and correspondence analysis.

Prerequisites: STAT 612, STAT 613.**STAT 618 Statistical Aspect of Machine Learning II: Modern Techniques****Credits 3. 3 Lecture Hours.**

Second course in statistical machine learning; recursive partition and tree-based methods, artificial neural networks, support vector machines, reproducing kernels, committee machines, latent variable methods, component analysis, nonlinear dimensionality reduction and manifold learning, matrix factorization and matrix completion, statistical analysis of tensors and multi-indexed data.

Prerequisites: STAT 612, STAT 613, and STAT 616.**STAT 620 Asymptotic Statistics****Credits 3. 3 Lecture Hours.**

Review of basic concepts and important convergence theorems; elements of decision theory; delta method; Bahadur representation theorem; asymptotic distribution of MLE and the LRT statistics; asymptotic efficiency; limit theory for U-statistics and differential statistical functionals with illustrations from M-, L-, R-estimation; multiple testing.

Prerequisite: STAT 614.**STAT 621 Advanced Stochastic Processes****Credits 3. 3 Lecture Hours.**

Conditional expectation; stopping times; discrete Markov processes; birth-death processes; queuing models; discrete semi-Markov processes; Brownian motion; diffusion processes, Ito integrals, theorem and limit distributions; differential statistical functions and their limit distributions; M-, L-, R-estimation.

Prerequisite: STAT 614 or STAT 615.**STAT 623 Statistical Methods for Chemistry****Credits 3. 3 Lecture Hours.**

Chemometrics topics of process optimization, precision and accuracy; curve fitting; chi-squared tests; multivariate calibration; errors in calibration standards; statistics of instrumentation.

Prerequisite: STAT 601, STAT 641 or STAT 652 or approval of instructor.**STAT 624 Databases and Computational Tools Used in Big Data****Credits 3. 3 Lecture Hours.**

Survey of common tools used by statisticians for high performance computing and big data type problems; shell scripting; HPC clusters; code optimization and vectorization; parallelizing applications using numerical libraries; open MP, MPI and parallel R; data management and revision control using Git; exploration of SQL, survey NOSQL databases; introduction to Python.

Prerequisites: Knowledge of R, Fortran, or C.**STAT 626 Methods in Time Series Analysis****Credits 3. 3 Lecture Hours.**

Introduction to statistical time series analysis; autocorrelation and spectral characteristics of univariate, autoregressive, moving average models; identification, estimation and forecasting.

Prerequisite: STAT 601 or STAT 642 or approval of instructor.**STAT 627 Nonparametric Function Estimation****Credits 3. 3 Lecture Hours.**

Nonparametric function estimation; kernel, local polynomials, Fourier series and spline methods; automated smoothing methods including cross-validation; large sample distributional properties of estimators; recent advances in function estimation.

Prerequisite: STAT 611.**STAT 630 Overview of Mathematical Statistics****Credits 3. 3 Lecture Hours.**

Basic probability theory including distributions of random variables and expectations. Introduction to the theory of statistical inference from the likelihood point of view including maximum likelihood estimation, confidence intervals, and likelihood ratio tests. Introduction to Bayesian methods.

Prerequisites: MATH 221, MATH 251, and MATH 253.**STAT 631 Statistical Methods in Finance****Credits 3. 3 Lecture Hours.**

Regression and the capital asset pricing model, statistics for portfolio analysis, resampling, time series models, volatility models, option pricing and Monte Carlo methods, copulas, extreme value theory, value at risk, spline smoothing of term structure.

Prerequisites: STAT 610, STAT 611, STAT 608.**STAT 632 Statistical Methodology II-Bayesian Modeling and Inference****Credits 3. 3 Lecture Hours.**

Decision theory; fundamentals of Bayesian inference; single and multi-parameter models; Gaussian model; linear and generalized linear models; Bayesian computations; asymptotic methods; non-iterative MC; MCMC; hierarchical models; nonlinear models; random effect models; survival analysis; spatial models.

Prerequisite: STAT 613.

STAT 633 Advanced Bayesian Modeling and Computation**Credits 3. 3 Lecture Hours.**

Bayesian methods in their research; methodology, and applications of Bayesian methods in bioinformatics, biostatistics, signal processing, machine learning, and related fields.

Prerequisite: STAT 608, STAT 613, STAT 632.

STAT 636 Applied Multivariate Analysis and Statistical Learning**Credits 3. 3 Lecture Hours.**

Exploratory analysis of multivariate data using ordination and clustering techniques; supervised learning methods of predictive modeling; regression and classification; model selection and regularization; resampling methods; nonlinear and tree-based models; error rate estimation; use of R software.

Prerequisites: STAT 630, or STAT 610 and STAT 611; MATH 304.

STAT 638 Introduction to Applied Bayesian Methods**Credits 3. 3 Lecture Hours.**

Uncertainty regarding parameters and how they can be explicitly described as a posterior distribution which blends information from a sampling model and prior distribution; emphasis on modeling and computations under the Bayesian paradigm; includes prior distributions, Bayes Theorem, conjugate and non-conjugate models, posterior simulation via the Gibbs sampler and MCMC, hierarchical modeling.

Prerequisites: STAT 630, or equivalent or approval of instructor.

STAT 639 Data Mining and Analysis**Credits 3. 3 Lecture Hours.**

Broad overview of data mining, integrating related concepts from machine learning and statistics; exploratory data analysis, pattern mining, clustering and classification; applications to scientific and online data.

Cross Listing: ECEN 758 and CSCE 676.

STAT 641 The Methods of Statistics I**Credits 3. 3 Lecture Hours.**

An application of the various disciplines in statistics to data analysis, introduction to statistical software; demonstration of interplay between probability models and statistical inference.

Prerequisite: Concurrent enrollment in STAT 610 or approval of instructor.

STAT 642 The Methods of Statistics II**Credits 3. 3 Lecture Hours.**

Design and analysis of experiments; scientific method; graphical displays; analysis of nonconventional designs and experiments involving categorical data.

Prerequisite: STAT 641.

STAT 643 Biostatistics I**Credits 3. 3 Lecture Hours.**

Bio-assay for quantitative and quantal responses: statistical analysis of contingency, including effect estimates, matched samples and misclassification.

Prerequisites: STAT 608, STAT 630, and STAT 642 or STAT 610.

STAT 644 Biostatistics II**Credits 3. 3 Lecture Hours.**

Generalized linear models; survival analysis with emphasis on nonparametric models and methods.

Prerequisite: STAT 643 or approval of instructor.

STAT 645 Applied Biostatistics and Data Analysis**Credits 3. 3 Lecture Hours.**

Survey of crucial topics in biostatistics; application of regression in biostatistics; analysis of correlated data; logistic and Poisson regression for binary or count data; survival analysis for censored outcomes; design and analysis of clinical trials; sample size calculation by simulation; bootstrap techniques for assessing statistical significance; data analysis using R.

Prerequisites: STAT 630, STAT 652, STAT 641, STAT 642, or STAT 611; prior knowledge of matrices and R programming.

STAT 646 Statistical Bioinformatics**Credits 3. 3 Lecture Hours.**

An overview of relevant biological concepts and technologies of genomic/proteomic applications; methods to handle, visualize, analyze, and interpret genomic/proteomic data; exploratory data analysis for genomic/proteomic data; data preprocessing and normalization; hypotheses testing; classification and prediction techniques for using genomic/proteomic data to predict disease status.

Prerequisites: STAT 604, STAT 651, STAT 652 or equivalent or prior approval of instructor.

STAT 647 Spatial Statistics**Credits 3. 3 Lecture Hours.**

Spatial correlation and its effects; spatial prediction (kriging); spatial regression; analysis of point patterns (tests for randomness and modelling patterns); subsampling methods for spatial data.

Prerequisite: STAT 630 or STAT 611 or equivalent.

STAT 648 Applied Statistics and Data Analysis**Credits 3. 3 Lecture Hours.**

Background to conduct research in the development of new methodology in applied statistics. Topics covered will include: exploratory data analysis; sampling; testing; smoothing; classification; time series; and spatial data analysis.

Prerequisite: Approval of instructor.

STAT 651 Statistics in Research I**Credits 3. 3 Lecture Hours.**

For graduate students in other disciplines; non-calculus exposition of the concepts, methods and usage of statistical data analysis; T-tests, analysis of variance and linear regression.

Prerequisite: MATH 102 or equivalent.

STAT 652 Statistics in Research II**Credits 3. 3 Lecture Hours.**

Continuation of STAT 651. Concepts of experimental design, individual treatment comparisons, randomized blocks and factorial experiments, multiple regression, Chi-squared tests and a brief introduction to covariance, non-parametric methods and sample surveys.

Prerequisite: STAT 651.

STAT 653 Statistics in Research III**Credits 3. 3 Lecture Hours.**

Advanced topics in ANOVA; analysis of covariance; and regression analysis including analysis of messy data; non-linear regression; logistic and weighted regression; diagnostics and model building; emphasis on concepts; computing and interpretation.

Prerequisite: STAT 652.

STAT 654 Statistical Computing with R and Python**Credits 3. 3 Lecture Hours.**

Aspects of numerical analysis for statisticians and data scientists including matrix inversion, splines, function optimization and MCMC; emphasis on implementing methods in R and python; data science skills such as code profiling, web scraping and data visualization.

Prerequisites: Basic knowledge of R or Python.**STAT 656 Applied Analytics Using SAS Enterprise Miner****Credits 3. 3 Lecture Hours.**

Introduction to data mining and will demonstrate the procedures; Optimal prediction decisions; comparing and deploying predictive models; neural networks; constructing and adjusting tree models; the construction and evaluation of multi-stage models.

Prerequisite: STAT 657, STAT 659.**STAT 657 Advanced Programming Using SAS****Credits 3. 3 Lecture Hours.**

Programming with SAS/IML, programming in SAS Data step, advanced use of various SAS procedures.

Prerequisites: STAT 604.**STAT 658 Transportation Statistics****Credits 3. 3 Lecture Hours.**

Design of experiments, estimation, hypothesis testing, modeling, and data mining for transportation specialists.

Prerequisite: STAT 211 or STAT 651.**STAT 659 Applied Categorical Data Analysis****Credits 3. 3 Lecture Hours.**

Introduction to analysis and interpretation of categorical data using ANOVA/regression analogs; includes contingency tables, loglinear models, logistic regression; use of computer software such as SAS, GLIM, SPSSX.

Prerequisite: STAT 601, STAT 641 or STAT 652 or equivalent.**STAT 661 Statistical Genetics I****Credits 3. 3 Lecture Hours.**

Basic concepts in human genetics, sampling designs, gene frequency estimation, Hardy-Weinberg equilibrium, linkage disequilibrium, association and transmission disequilibrium test studies, linkage and pedigree analysis, segregation analysis, polygenic models, DNA sequence analysis.

Prerequisites: STAT 610 and STAT 611.**STAT 667 Statistics for Advanced Placement Teachers****Credits 1 to 3. 1 to 3 Lecture Hours.**

Review of the fundamental concepts and techniques of statistics; topics included in Advanced Placement Statistics; exploring data, planning surveys and experiments, exploring models, statistical inference.

Prerequisite: Approval of instructor.**STAT 673 Time Series Analysis I****Credits 3. 3 Lecture Hours.**

Introduction to diverse modes of analysis now available to solve for univariate time series; basic problems of parameter estimation, spectral analysis, forecasting and model identification.

Prerequisite: STAT 611 or equivalent.**STAT 674 Time Series Analysis II****Credits 3. 3 Lecture Hours.**

Continuation of STAT 673. Multiple time series, ARMA models, test of hypotheses, estimation of spectral density matrix, transfer function and forecasting.

Prerequisites: STAT 673.**STAT 677 Advanced Spatial Statistics****Credits 3. 3 Lecture Hours.**

Spatial statistics from an advanced perspective; Gaussian processes; Gaussian Markov random fields; positive definite functions; nonstationary and multivariate process; hierarchical spatial models; measurement error; change of support; computational approaches for large spatial data sets; spatio-temporal statistics.

Prerequisites: STAT 612, STAT 613, and STAT 632.**STAT 681 Seminar****Credit 1. 1 Lecture Hour.**

Oral presentations of special topics and current research in statistics. May be repeated for credit.

Prerequisite: Graduate classification in statistics.**STAT 684 Professional Internship****Credits 1 to 3. 1 to 3 Other Hours.**

Practicum in statistical consulting for students in PhD program. Students will be assigned consulting problems brought to the Department of Statistics by researchers in other disciplines.

Prerequisite: STAT 642 or its equivalent.**STAT 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Individual instruction in selected fields in statistics; investigation of special topics not within scope of thesis research and not covered by other formal courses.

Prerequisites: Graduate classification and approval of department head.**STAT 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of statistics. Open to non-majors. May be repeated for credit.

Prerequisite: Approval of instructor.**STAT 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

Prerequisite: Graduate classification.**STAT 695 Frontiers in Statistical Research****Credit 1. 1 Lecture Hour.**

Familiarize the present status of research in a wide variety of new areas of statistical research; content will vary from semester to semester but will always be framed around introducing new research areas. May be taken six times for credit.

Prerequisites: Graduate classification in the Department of Statistics or approval of instructor.

SURG - Surgery

SURG 800 Surgery Clerkship**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

25 to 15. Clinical surgery with workup of patients and participation with the clinical faculty in preoperative evaluation, operative procedure and postoperative care; participation in clinical rounds, conferences, emergency room and formal classroom activity.

Prerequisite: Satisfactory completion of year two of the medical curriculum.**SURG 801 Plastic Surgery****Credits 1.25 to 6.3. 1.25 to 6.3 Other Hours.**

25 to 6.25.

SURG 802 Otolaryngology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with surgically general otolaryngology. Increase the student's familiarity and knowledge to promote the understanding and performance of a comprehensive otolaryngology examination in both adults and children; expand the knowledge base to understand the diagnosis and treatment of common otolaryngologic problems and emergencies; provide the exposure and basic knowledge in the use of common otolaryngologic practices such as: fiber optic equipment, audiology, allergy, operating microscope and vestibular testing.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 803 General Surgery; 820. Ent Surgery Elective**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with general surgical procedures. Increase the student's training in both pre and post-op care of general surgical patients and to expand on their OR and procedural experience; provide experience in emergency surgical care; perform an initial history and physical examination and plan initial workup of general surgical patients seen as an elective or emergency consultation; scrub in surgery, recognize anatomic structures, and know what procedure is indicated; become familiar with general surgical emergency situations, both inpatient and outpatient.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 804 Surgery of the Spine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with spine and musculoskeletal surgical procedures. Increase the student's familiarity and knowledge to perform a spine and musculoskeletal exam, identify various congenital and acquired pathologies of the spine and formulate treatment strategies, demonstrate an understanding of the different techniques and goals of various spinal surgeries.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 805 Neurosurgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will allow the student to correlate neuroanatomy and neurophysiology in the major areas of neurosurgical care: brain, spine, and peripheral nerves. Additionally, the student will correlate imaging studies with surgical anatomy. The student will be provided with a broad exposure to neurological diseases requiring surgical intervention. The student will be provided with the opportunity to assist with pre-operative and post-operative evaluation as well as operative experience, including serving as a surgical assistant in selected cases.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 806 Orthopedic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 4-week elective will familiarize the student with orthopedic surgery which will involve treatment of musculoskeletal disorders. This elective will increase the student's familiarity and knowledge with both ambulatory and surgical treatment of common orthopedic problems; allow students to assist in surgery and management of fractures; help students be able to recognize and describe common fracture patterns seen in a community setting; introduce students to adult reconstructive orthopedic surgery, including joint replacement procedures and arthroscopic surgery. Students can also diagnose many common ambulatory orthopedic problems; diagnose inpatient orthopedic problems to facilitate communication with orthopedic specialists; read plain films and selected MRI scans; and demonstrate an understanding the impact of orthopedic problems in the general health and well-being of patients.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 807 Plastic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will provide an exposure to a broadly based plastic and reconstructive surgery practice including pediatric and adult craniofacial, hand, microsurgery, soft tissue tumor, trauma, aesthetic and burn surgery. The student will be provided a one-on-one experience with senior staff in both the clinic and operating room. The student will be involved with all aspects of the management of the Plastic Surgery patient: initial diagnosis, assisting with surgery, and post-operative care, fully integrating the student into the Plastic Surgery team.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 808 Orthopedic Surgery; 835. Orthopedic Surgery/Sports Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective provides an experience for medical students in orthopedic surgery and the treatment of musculoskeletal disorders. Students will participate in the ambulatory and surgical treatment of common orthopedic problems. Students will assist in surgery and the management of closed fractures and recognize and describe common fracture patterns seen in the community setting. Surgeries include but are not limited to joint replacement, arthroscopy, fractures, foot and hand reconstruction, sports medicine and spine. Students will become familiar with the techniques of orthopedic history taking and musculoskeletal examination. Students will participate in orthopedic trauma call at a level dependent upon their individual interest.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 810 Oral and Maxillofacial Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective is an introduction to the spectrum of trauma and pathology seen in the practice of Oral and Maxillofacial Surgery. Increase the student's familiarity and knowledge of practical head and neck anatomy and its application to diagnostic and surgical procedures; instruction on common regional blocks of the head and neck for pain management; strengthening of student's knowledge of antibiotic therapy of maxillofacial infections. Students will participate in diagnosing and management of maxillofacial trauma and infections.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 811 Neurosurgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will allow the student to correlate neuroanatomy and neurophysiology in the major areas of neurosurgical care: brain, spine, and peripheral nerves. Additionally, the student will correlate imaging studies with surgical anatomy. The student will be provided with a broad exposure to neurological diseases requiring surgical intervention. The student will be provided with the opportunity to assist with pre-operative and post-operative evaluation as well as operative experience, including serving as a surgical assistant in selected cases.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 812 Bariatric Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10.

SURG 814 Cardiothoracic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with surgically-reparable cardiac conditions, including atherosclerotic heart disease, congenital and acquired valvulopathies, congenital and acquired cardiac malformations, including atrial and ventricular septal defects, and other cardiac pathologies amenable to surgical correction. The student will also become familiar with critical care physiology, monitoring, and treatment. Additionally, the student will participate pre-op evaluations, decision-making, surgical operations, and postoperative care.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 815 Urology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4- week elective is designed to give the student experience in the evaluation and management of common clinical problems seen in a Urology practice. The elective will familiarize the student with the techniques utilized in urologic historical and physical examination; the basic urologic evaluation and indications for specialized urologic examination; urologic diagnostic and therapeutic events to enable understanding of the indications and contraindications for diagnostic testing and surgical therapy.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 816 Surgery Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. Advanced level of surgical training by approaching the functioning responsibility of an intern while building on the clinical skills obtained in third year Surgery Clerkship; training in pre and post-op care of general surgical patients to expand OR and procedural experiences; experience in emergency surgical care by taking in house surgical call with the junior general surgical resident; more in depth involvement for senior medical students in the care of critically ill patients within the intensive care unit setting.

SURG 817 Vascular Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will further the educational experience in the clinical care of patients with vascular surgical disorders and improve the clinical acumen of students in recognizing the problems of these patients as individuals. The student will broaden his/her educational base and enable him/her to make decisions about the care of patients with vascular surgical problems. The elective will provide students with an experience which will enable those considering vascular surgery as a career choice to further evaluate this decision as to its appropriateness. Additionally, the course will provide students with broad exposure to the various surgery educational activities.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 818 Surgical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week SICU rotation will provide the student with additional experience in the management of critically ill trauma and general surgical patients, as well as exposure to the multi-disciplinary management of those patients. This will include education directed towards ventilatory management, hemodynamic monitoring and management, as well as nutritional, pharmacologic, and rehabilitative efforts.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 819 Abdominal Transplant Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 4-week elective will be exposed to all realms of transplantation surgery, including the procurement procedure ("donor") and transplants (liver, kidney and pancreas). Also, an essential part of our field is the postoperative care of the recipient, including ICU management. Finally, the student will attend our pre and posttransplant clinics to gain a full understanding of transplantation medicine. Multiple didactic sessions are offered.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 820 ENT Surgery Elective**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with general surgical procedures. Increase the student's training in both pre and post-op care of general surgical patients and to expand on their OR and procedural experience; provide experience in emergency surgical care; perform an initial history and physical examination and plan initial workup of general surgical patients seen as an elective or emergency consultation; scrub in surgery, recognize anatomic structures, and know what procedure is indicated; become familiar with general surgical emergency situations, both inpatient and outpatient.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 821 Acute Care Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will provide a broad exposure to the evaluation and management of patients with urgent/emergent surgical problems. Provide a broad exposure to operative techniques and an opportunity to develop technical skills. Provide practical clinical experience in preparation for a surgical internship.

SURG 822 General Surgery – GI II**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will strive to: Provide an exposure to a broadly based plastic and reconstructive surgery practice including adult cranio-facial, hand, microsurgery, soft tissue tumor, trauma, aesthetic and burn surgery; Involve the student in the management of the plastic surgery patient: initial diagnosis, assisting with surgery, and post-operative care; Integrate the student into the Plastic Surgery team.

SURG 823 Liver/Kidney Transplantation**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The faculty will strive to: provide a broad exposure to fundamental concepts of perioperative care, and specific exposure to the comprehensive management of transplant patients and the process of transplantation; educate the student on various aspects of transplantation to include organ preservation, procurement, immunosuppressive medications and surgical complications; provide the medical student with the opportunity to take on increasing responsibilities while building on the clinical skills obtained by the student in his third year Surgery Clerkship.

SURG 824 Neurosurgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective will strive to: Provide the student with a broad exposure to neurological diseases requiring surgery. Provide the student with opportunity to scrub into neurosurgical cases and assist during operations in selected cases. Provide an environment in which students can learn about the field of neurosurgery and what it entails. Provide input and advice for those interested in pursuing a career in the neurological sciences.

SURG 825 Surgical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week SICU rotation will provide the student with additional experience in the management of critically ill trauma and general surgical patients, as well as exposure to the multi-disciplinary management of those patients. This will include education directed towards ventilatory management, hemodynamic monitoring and management, as well as nutritional, pharmacologic, and rehabilitative efforts.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 826 Orthopedic Surgery; 835. Orthopedic Surgery/Sports Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective provides an experience for medical students in orthopedic surgery and the treatment of musculoskeletal disorders. Students will participate in the ambulatory and surgical treatment of common orthopedic problems. Students will assist in surgery and the management of closed fractures and recognize and describe common fracture patterns seen in the community setting. Surgeries include but are not limited to joint replacement, arthroscopy, fractures, foot and hand reconstruction, sports medicine and spine. Students will become familiar with the techniques of orthopedic history taking and musculoskeletal examination. Students will participate in orthopedic trauma call at a level dependent upon their individual interest.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 827 Urology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4- week elective is designed to give the student experience in the evaluation and management of common clinical problems seen in a Urology practice. The elective will familiarize the student with the techniques utilized in urologic historical and physical examination; the basic urologic evaluation and indications for specialized urologic examination; urologic diagnostic and therapeutic events to enable understanding of the indications and contraindications for diagnostic testing and surgical therapy.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 828 Cardiovascular and Thoracic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will allow students to become a part of the surgical team caring for patients undergoing cardiac procedures. Students participate with cardiologists, attending surgeons and a house staff in the evaluation and follow-up of cardiac surgical patients. The experience emphasizes applied cardiopulmonary physiology and diagnostic studies in patient management.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 829 Surgical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week SICU rotation will provide the student with additional experience in the management of critically ill trauma and general surgical patients, as well as exposure to the multi-disciplinary management of those patients. This will include education directed towards ventilatory management, hemodynamic monitoring and management, as well as nutritional, pharmacologic, and rehabilitative efforts.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 830 Otolaryngology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The 2- or 4-week elective is designed to provide the student with an experience with in patient and ambulatory Otolaryngology. Students will become competent with the basic equipment used in an Otolaryngology office. The student will develop competence in the performance of the Otolaryngology exam in both adults and children, and in the diagnosis and treatment of common Otolaryngologic problems and emergencies.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 831 General Surgery; 820. Ent Surgery Elective**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with general surgical procedures. Increase the student's training in both pre and post-op care of general surgical patients and to expand on their OR and procedural experience; provide experience in emergency surgical care; perform an initial history and physical examination and plan initial workup of general surgical patients seen as an elective or emergency consultation; scrub in surgery, recognize anatomic structures, and know what procedure is indicated; become familiar with general surgical emergency situations, both inpatient and outpatient.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 832 Cardiovascular and Thoracic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will allow students to become a part of the surgical team caring for patients undergoing cardiac procedures. Students participate with cardiologists, attending surgeons and a house staff in the evaluation and follow-up of cardiac surgical patients. The experience emphasizes applied cardiopulmonary physiology and diagnostic studies in patient management.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 833 Clinical Ophthalmology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2-week elective is designed to provide an experience for those considering Orthopedic Surgery and introduces the students to care and treatment of common Orthopedic problems with basic ophthalmic equipment.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 834 Plastic Surgery Acting Internship**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This elective is designed to give the student an in-depth experience in the practice of plastic and reconstructive surgery. Students will receive one-on-one experience with faculty in both the clinic and operating room and will be given the opportunity to be involved with the management of the Plastic Surgery patients from start to finish. Housing is not provided. No night call is required.

SURG 835 Orthopedic Surgery/Sports Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective provides an experience for medical students in orthopedic surgery and the treatment of musculoskeletal disorders. Students will participate in the ambulatory and surgical treatment of common orthopedic problems. Students will assist in surgery and the management of closed fractures and recognize and describe common fracture patterns seen in the community setting. Surgeries include but are not limited to joint replacement, arthroscopy, fractures, foot and hand reconstruction, sports medicine and spine. Students will become familiar with the techniques of orthopedic history taking and musculoskeletal examination. Students will participate in orthopedic trauma call at a level dependent upon their individual interest.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 836 Orthopedic Surgery/Sports Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective is designed to provide an experience for those considering Orthopedic Surgery and introduce the students to care and treatment of common orthopedic problems. The elective will provide students with the experience to perform initial orthopedic evaluations associated with sports injuries as well as routine orthopedic physical exams.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 837 Urology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4- week elective is designed to give the student experience in the evaluation and management of common clinical problems seen in a Urology practice. The elective will familiarize the student with the techniques utilized in urologic historical and physical examination; the basic urologic evaluation and indications for specialized urologic examination; urologic diagnostic and therapeutic events to enable understanding of the indications and contraindications for diagnostic testing and surgical therapy.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 838 Surgical Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will provide an in-depth experience in the field of surgical oncology, especially upper gastrointestinal malignancies. The student will be involved in the preoperative, intra-operative, and post-operative care of the patient. The elective will provide a better understanding of the significance of multimodality treatment regimens in the therapy of cancer.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 839 Surgical Intensive Care Unit**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week SICU rotation will provide the student with additional experience in the management of critically ill trauma and general surgical patients, as well as exposure to the multi-disciplinary management of those patients. This will include education directed towards ventilatory management, hemodynamic monitoring and management, as well as nutritional, pharmacologic, and rehabilitative efforts.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 840 Plastic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will provide an exposure to a broadly based plastic and reconstructive surgery practice including pediatric and adult craniofacial, hand, microsurgery, soft tissue tumor, trauma, aesthetic and burn surgery. The student will be provided a one-on-one experience with senior staff in both the clinic and operating room. The student will be involved with all aspects of the management of the Plastic Surgery patient: initial diagnosis, assisting with surgery, and post-operative care, fully integrating the student into the Plastic Surgery team.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 841 Surgical Oncology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will provide an in-depth experience in the field of surgical oncology, especially upper gastrointestinal malignancies. The student will be involved in the preoperative, intra-operative, and post-operative care of the patient. The elective will provide a better understanding of the significance of multimodality treatment regimens in the therapy of cancer.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 842 Adult and Pediatric Urology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective is designed to give the student a hands-on experience in a busy urology practice. Time will be spent in the clinic and in the operating room. It will include participation in the diagnosis, evaluation, and treatment of a wide spectrum of urologic disease. The elective will provide students the experience of performing urologic history and physical exam; developing a treatment plan for patients with common urologic problems; interpreting urologic imaging studies including CT scan, ultrasound, and intra-operative fluoroscopy.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 843 Genitourinary**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 4-week elective is designed to facilitate their educational process and to stimulate further interest in urology. This elective will increase the student's familiarity and knowledge of basic urological evaluation, and indications for specialized urologic examination of radiographic, ultrasonographic, endoscopic, and urodynamic studies. This elective will also expose students to urologic instrumentation in both the inpatient and outpatient setting in an attempt to give insight into the indications and contraindications for instrumentation, and to initiate understanding of the normal versus the pathologic states identified at instrumentation of the genitourinary tract.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 844 Cardiothoracic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with surgically-reparable cardiac conditions, including atherosclerotic heart disease, congenital and acquired valvulopathies, congenital and acquired cardiac malformations, including atrial and ventricular septal defects, and other cardiac pathologies amenable to surgical correction. The student will also become familiar with critical care physiology, monitoring, and treatment. Additionally, the student will participate pre-op evaluations, decision-making, surgical operations, and postoperative care.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 845 Transplant Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective is designed to educate the student on the process of transplantation from the preoperative evaluation to the postoperative care; introduce the student to various aspects of transplantation to include organ preservation, procurement, immunology, immunosuppressive medications and technical complications. This elective will increase the student's familiarity and knowledge of surgical complications of the transplant recipient and their treatment and surgical alternatives for dialysis access in the renal failure patients.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 846 General Surgery; 820. Ent Surgery Elective**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will familiarize the student with general surgical procedures. Increase the student's training in both pre and post-op care of general surgical patients and to expand on their OR and procedural experience; provide experience in emergency surgical care; perform an initial history and physical examination and plan initial workup of general surgical patients seen as an elective or emergency consultation; scrub in surgery, recognize anatomic structures, and know what procedure is indicated; become familiar with general surgical emergency situations, both inpatient and outpatient.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 847 Oral and Maxillofacial Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective is an introduction to the spectrum of trauma and pathology seen in the practice of Oral and Maxillofacial Surgery. Increase the student's familiarity and knowledge of practical head and neck anatomy and its application to diagnostic and surgical procedures; instruction on common regional blocks of the head and neck for pain management; strengthening of student's knowledge of antibiotic therapy of maxillofacial infections. Students will participate in diagnosing and management of maxillofacial trauma and infections.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 848 Ophthalmology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will increase the student's familiarity and knowledge of ocular history taking; general ocular examination; concepts of medical ophthalmology and systemic disease relationships; basic elements of neuro-ophthalmology and understand the fundamentals of strabismus and its diagnosis.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 849 Pediatric Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will increase the student's familiarity and knowledge of children/neonates as surgical patients. This elective will increase the student's familiarity and knowledge to recognize entities peculiar to pediatric surgery; manage and treat common pediatric surgical problems.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 850 Orthopedic Surgery; 835. Orthopedic Surgery/Sports Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective provides an experience for medical students in orthopedic surgery and the treatment of musculoskeletal disorders. Students will participate in the ambulatory and surgical treatment of common orthopedic problems. Students will assist in surgery and the management of closed fractures and recognize and describe common fracture patterns seen in the community setting. Surgeries include but are not limited to joint replacement, arthroscopy, fractures, foot and hand reconstruction, sports medicine and spine. Students will become familiar with the techniques of orthopedic history taking and musculoskeletal examination. Students will participate in orthopedic trauma call at a level dependent upon their individual interest.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 851 Vascular Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will further the educational experience in the clinical care of patients with vascular surgical disorders and improve the clinical acumen of students in recognizing the problems of these patients as individuals. The student will broaden his/her educational base and enable him/her to make decisions about the care of patients with vascular surgical problems. The elective will provide students with an experience which will enable those considering vascular surgery as a career choice to further evaluate this decision as to its appropriateness. Additionally, the course will provide students with broad exposure to the various surgery educational activities.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 852 Otolaryngology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. The 2- or 4-week elective is designed to provide the student with an experience with in patient and ambulatory Otolaryngology. Students will become competent with the basic equipment used in an Otolaryngology office. The student will develop competence in the performance of the Otolaryngology exam in both adults and children, and in the diagnosis and treatment of common Otolaryngologic problems and emergencies.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 853 Podiatry**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2-week elective is designed to educate the student on the medical problems of the foot. This elective will increase the student's familiarity and knowledge to evaluate weight bearing foot x-rays; perform a thorough examination, diagnose and provide differentiate foot problems. Students will properly render, prescribe, or evaluate diabetic foot care; understand how to perform a digital block; and perform a basic biomechanical exam.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 854 Orthopedic Surgery; 835. Orthopedic Surgery/Sports Medicine**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective provides an experience for medical students in orthopedic surgery and the treatment of musculoskeletal disorders. Students will participate in the ambulatory and surgical treatment of common orthopedic problems. Students will assist in surgery and the management of closed fractures and recognize and describe common fracture patterns seen in the community setting. Surgeries include but are not limited to joint replacement, arthroscopy, fractures, foot and hand reconstruction, sports medicine and spine. Students will become familiar with the techniques of orthopedic history taking and musculoskeletal examination. Students will participate in orthopedic trauma call at a level dependent upon their individual interest.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 855 Plastic Surgery**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4-week elective will provide an exposure to a broadly based plastic and reconstructive surgery practice including pediatric and adult craniofacial, hand, microsurgery, soft tissue tumor, trauma, aesthetic and burn surgery. The student will be provided a one-on-one experience with senior staff in both the clinic and operating room. The student will be involved with all aspects of the management of the Plastic Surgery patient: initial diagnosis, assisting with surgery, and post-operative care, fully integrating the student into the Plastic Surgery team.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 856 Urology**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- or 4- week elective is designed to give the student experience in the evaluation and management of common clinical problems seen in a Urology practice. The elective will familiarize the student with the techniques utilized in urologic historical and physical examination; the basic urologic evaluation and indications for specialized urologic examination; urologic diagnostic and therapeutic events to enable understanding of the indications and contraindications for diagnostic testing and surgical therapy.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 857 Ophthalmology - Retina**Credits 1.25 to 10. 1.25 to 10 Other Hours.**

25 to 10. This 2- to 4-week elective is designed for students work along faculty in the diagnosis, testing and treatment of corneal, external, and vitreoretinal diseases. This elective will increase the student's familiarity and knowledge as they learn how to use a direct-ophthalmoscope, slit lamp and other specialized instruments as well as how to perform ophthalmology examinations. They are allowed to observe surgical procedures performed both in office and in the operating room.

Prerequisite: Satisfactory completion of year three of the medical school curriculum.

SURG 858 General Surgery**Credits 1 to 15. 1 to 15 Other Hours.**

Integration into the service as a member of the surgical team; participation in all aspects of patient management as both inpatient and outpatient; completion of at least 40 hours per week on the service; participation in night call required; housing not provided.

Prerequisite: Admission to medical school.

SURG 985 Off Campus Student Initiated Elective**Credits 1.25 to 15. 1.25 to 15 Other Hours.**

Formally described elective courses at another medical school or off-campus opportunities that are not formally approved electives. The College of Medicine requires that each of these electives be approved prior to the rotation.

SURG 999 On Campus Student Initiated Elective**Credits 1.25 to 12. 1.25 to 12 Other Hours.**

25 to 12. This is an on-campus opportunity in the department of Surgery in the College of Medicine that is not defined herein. Experiences may include clinical research, basic science research, library research, other basic science activities, and other clinical activities. Students interested in developing an elective of this type should contact the head of the appropriate department for additional details.

SYEN - Systems Engineering

SYEN 640 Systems Thinking and Analysis

Credits 3. 3 Lecture Hours.

Introduction to the systems thinking process and the fundamental considerations associated with the engineering of large-scale systems or system of systems.

Prerequisites: Graduate classification; MATH 304 or approval of instructor.

SYEN 641 Systems Engineering Methods and Frameworks

Credits 3. 3 Lecture Hours.

Concepts, methodologies, methods and tools for discovery, definition, analysis, design, creation and sustainment of systems involving information, physical and human elements; architecture modeling methods include IDEF/UPDM; systems engineering frameworks include DoDAF/MoDAF and Zachman; analysis tools include executable architectures to assess consistency, interoperability and performance.

Prerequisite: MATH 304 or approval of instructor.

SYEN 642 Systems Performance Modeling

Credits 3. 3 Lecture Hours.

Development and formulation of models to evaluate and improve system performance; Survey of Math Programming; decision trees; simulation models; and economic evaluation of systems; examples and applications of linear programming, nonlinear programming, integer programming, systems simulation, multi-objective formulations, solution interpretation and sensitivity analysis.

SYEN 643/ISEN 670 Theory of Socio-Technical Systems

Credits 3. 3 Lecture Hours.

Philosophy, origins, theory, principles and methodologies of complex socio-technical systems; emphasis on holistic thinking for systems engineering; systems approach; cybernetics; complexity science; physical and biological systems; social, economic and political systems; network representations of systems; real-world decision-making; system dynamics; emergent behavior; systems architecture; engineered systems today and in the future.

Prerequisite: Graduate classification.

Cross Listing: ISEN 670/SYEN 643.

SYEN 644 Decision Making Under Uncertainty in Systems Engineering

Credits 3. 3 Lecture Hours.

Formulating models and making engineering decisions about systems and systems of systems operating under uncertainty; review of probabilistic modeling and statistical analysis; risk analysis and assessment for complex stochastic systems; mathematical decision theory, heuristic decision methods, value-driven decision making, sequential decision problems, real options theory and deferred decision making.

Prerequisite: Graduate classification.

SYEN 645/ISEN 665 Management of Engineering Systems

Credits 3. 3 Lecture Hours.

Theory and practice of leadership and management in engineering organizations; focus on both "hard" skills (systems engineering process, project management, planning, forecasting, financial analysis) and "soft" skills (leadership styles, motivation, teamwork, managing creative people, navigating informal networks); science and technology policy; economic implications of engineering and technology.

Prerequisite: Graduate classification.

Cross Listing: ISEN 665/SYEN 645.

SYEN 685 Directed Studies

Credits 1 to 12. 1 to 12 Other Hours.

Offered to enable students to undertake and complete limited investigations not within their thesis research and not covered by any other courses in curriculum.

Prerequisite: Graduate classification.

SYEN 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research for thesis or dissertation.

Prerequisite: Graduate classification. May be repeated for credit.

TAMU - TAMU Study Abroad/ Consortium

TAMU 699 HSC Gulf Coast Consortium

Credits 0 to 12. 0 to 12 Other Hours.

Holding course for inter-institutional collaboration programs which allows graduate students at Texas A&M Health Science Center or institutions in the Gulf Coast Consortium to take courses at these institutions and transfer credit.

TAMU 999 Graduate Continuous Enrollment

Credits 0 to 9. 0 to 9 Lecture Hours.

To be used with programs between Texas A&M University and other systems schools to keep students consecutively enrolled at TAMU; continuous enrollment needed to maintain active status for all students in these programs in order to utilize TAMU resources such as Howdy and Library access; enrolled students should be able to use these resources related to their program; verification of students each semester from system partners is required in order to be enrolled in the course for the participating program.

TCMT - Technical Management

TCMT 610 Engineering Personal Leadership

Credits 3. 3 Lecture Hours.

Development of cognitive, emotional, behavioral capabilities; identification and exploration of Emotional Intelligence (EQ) competencies; focuses on both the art and science of emotional EQ.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 611 Financial Decision Making

Credits 3. 3 Lecture Hours.

Addresses application of financial concepts in engineering decision making; exploration of analysis of labor and material expenses, accounting methods and forecasting; combines scenario discussions, reflections, group exercises, and practical application learning.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 612 Technical Management Decision Making**Credits 3. 3 Lecture Hours.**

Key business concepts, practical processes and analytical tools to make value-driven decisions; focuses on linkage between managerial decisions and the performance of business enterprises; introduction to business strategy, financial principles, organization processes and people skills managers must weigh when making executable judgement calls; analytical tools to evaluate decisions and communicate desired outcomes with different professionals; use of business cases and real-world projects to help master practical knowledge and apply immediately.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 621 Technical Project Management**Credits 3. 3 Lecture Hours.**

Introduction to project management; emphasis on technical skills needed to manage complex projects and soft skills needed to communicate and manage the project team within a corporate structure.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 622 Value Chain Management**Credits 3. 3 Lecture Hours.**

Selected topics for the quantitative management an optimal operation of a supply-chain; emphasis on the interdependencies among supply-chain processes, integration of engineering, operational and financial metrics, supply-chain capability and asset management.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 631 Capstone I**Credits 3. 3 Lecture Hours.**

Addresses managing individual or collaborative engineering programs in complex dynamic business environments; provides tools and techniques to execute projects, programs and product enhancement initiatives that yield desired business results; learn through deductive, inductive and abductive analytical methods how to document and manage engineering program activities.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 632 Developing New Products**Credits 3. 3 Lecture Hours.**

Provides a technical background and understanding into the expectations, interactions, dependencies, deliverables and key components necessary to position new product within industry and utilizing the New Product and Service Development process (NSPD); relevant for managers of innovation interested in exploring new products and services as an asset class and underpin market success; based around five key areas underpinning NSPD; introduction to real life examples and opportunities to utilize the entire NSPD process to develop a mock product.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 633 Contract and Risk Management**Credits 3. 3 Lecture Hours.**

Basic legal issues and terms commonly encountered by engineering businesses of all sizes; greater overall understanding of the company itself and allow technical professionals to more knowledgeably, efficiently and effectively lead their business; overview of relevant legal aspects of managing an engineering company with emphasis on contracts and intellectual property management; understanding of contract terms and clauses; identification and mitigation of areas of potential legal liability through contract negotiation; how to manage and commercialize intellectual property.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 641 Capstone II**Credits 3. 3 Lecture Hours.**

Research project for firm or the Global Supply Chain Laboratory under the guidance of the instructor, other faculty and researchers in the lab; development of a problem statement, proposal, mid-term update, final report, and presentation for management.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 642 Managing Technical Teams**Credits 3. 3 Lecture Hours.**

Offers background, tools and basic understanding into the skills, traits, expectations and interactions of a manager or leader of a technical or professional team; compilation of tacit knowledge; focuses on eight key elements central and fundamental to successful technical leadership and management; introduction to a series of case examples or scenarios and appropriate readings and discussions to support concepts.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TCMT 689 Special Topics In...**Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of engineering technical management. May be repeated for credit.

Prerequisite: Admission to the Master of Engineering Technical Management program.

TEED - Teacher Education

TEED 602 Contemporary Perspectives on Education**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Current issues in American public education concerning sociological, curricular, political and legal perspectives.

Prerequisite: Admission to Post-Baccalaureate Teacher Certification Program.

TEED 649 Instructional Strategies in Academic Specialties in Middle and Senior HS: Principles & Applications**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Instructional Strategies in Academic Specialties in Middle and Senior High School: Principles and Applications. Relation of information processing models to theory and practice of planning, delivering and evaluating instruction in public school settings. Subject matter and generic competencies required for teacher certification in Texas.

TEED 682 Seminar**Credits 3. 3 Lecture Hours.**

Reports of research, discussions and analysis of problems and issues in teaching/learning with first year of teaching in public schools. May be repeated for credit.

Prerequisites: TEED 602 and TEED 649.

TEED 684 Professional Internship**Credits 3 to 9. 3 to 27 Other Hours.**

Supervised experiences in performing professional functions in classroom settings.

Prerequisite: Approval of program coordinator.

URSC - Urban Science

URSC 601 Foundations of Research in Urban and Regional Science**Credits 3. 3 Lecture Hours.**

Introduction to the research process and its application to problems in urban, planning and regional science; presentation of philosophy and logic underlying the scientific method; critical analysis of planning and design literature according to each step of the research process; problem definition, hypothesis development, study design, analysis and interpretation of the findings.

URSC 602 Research Methods in Urban and Regional Science**Credits 3. 3 Lecture Hours.**

Basic empirical research methods used in urban, planning and regional science research: experimental, survey and case study designs; comparisons of various methods; application of techniques in sample selection, data collection and analytical approaches.

Prerequisite: URSC 641 or STAT 651 or approval of instructor.**URSC 631 Foundations of Planning Thought****Credits 3. 3 Lecture Hours.**

Examines a series of foundational issues in planning and design theory; includes the definition of planning problems, rationality, modernism and post modernism, the validation of value judgments, relations with future generations, multiculturalism and gender justice in liberal democratic societies.

Prerequisite: Doctoral classification or approval of instructor.**URSC 632 Structure and Functions of Cities and Regions****Credits 3. 3 Lecture Hours.**

Surveys the design, financial, natural, physical, political and social parameters that influence the development of cities and regions, including presentation of theories about cities and regions, organization of, planning to shape them, and public and private sector plans for structure and function of cities and regions.

Prerequisite: Doctoral classification or approval of instructor.**URSC 641 Analytic Methods in Landscape and Urban Research I****Credits 3. 3 Lecture Hours.**

Explicitly address linking theory, measurement, data set development and data analysis issues critical for conducting research in urban and regional planning and landscape architecture.

Prerequisites: Doctoral classification or approval of instructor.**URSC 642 Analytic Methods in Landscape and Urban Research II****Credits 3. 3 Lecture Hours.**

Provides a survey of hands on experiences with advanced techniques and procedures related to conceptual measurement and operational issues, data set development and manipulation and data analysis issues critical for conducting academic research.

Prerequisites: STAT 651, CARC 601, URSC 641, or approval of instructor.**URSC 681 Seminar****Credit 1. 1 Lecture Hour.**

Oral communication of current research and selected topics in urban and regional science to include lectures, presentations, interviews and discussions.

Prerequisite: Approval of instructor.**URSC 682 Seminar****Credit 1. 1 Lecture Hour.**

Written communication of current research and selected topics in urban and regional science to include posters, articles, reports and books.

Prerequisite: Approval of instructor.**URSC 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Directed study of selected problems within urban and regional science.

Prerequisite: Approval of instructor.**URSC 689 Special Topic in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in and identified area of urban and regional science. May be repeated for credit.

Prerequisite: Approval of instructor.**URSC 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for dissertation.

Prerequisite: Approval of instructor.

VIBS - Vet Integrative Biosci.

VIBS 601 Anatomy**Credits 4. 2 Lecture Hours. 6 Lab Hours.**

Topographical dissection of one of the following domestic animals:

horse, ox, dog or cat. May be taken more than once but not to exceed 12 hours of credit toward a graduate degree.

Prerequisite: VIBS 912 or 305 or equivalent.**VIBS 602 Histology****Credits 4. 2 Lecture Hours. 6 Lab Hours.**

Molecular phenomena placed in context with tissues, organs and organ systems; cell and tissue structures visualized by light microscopy and electron micrographs for functional relationships; clinical correlations reveal relevance of histology in specific disease states; conceptual thinking exercises facilitate problem-solving skills.

Prerequisite: Graduate classification.**VIBS 603/NRSC 603 Neuroanatomy****Credits 4. 2 Lecture Hours. 6 Lab Hours.**

Gross, developmental and microscopic anatomy of nervous system of selected laboratory and domestic animals.

Prerequisite: Approval of instructor.**Cross Listing:** NRSC 603/VIBS 603.**VIBS 604/NRSC 604 Biomedical Neuroendocrinology and Endocrine Disorders****Credits 3. 3 Lecture Hours.**

Gross and functional anatomy and endocrine functions of neuroendocrine systems, hypothalamus and pituitary. Neuroendocrine control of puberty, sexual behavior, menstruation, ovulation, pregnancy, labor, lactation, testis, thyroid, growth, stress, diabetes, obesity, sleep, memory, learning and aging and their disorders. Overview biosynthesis, transport and signaling of neuropeptides, prostaglandins, peptide and steroid hormones.

Prerequisite: Approval of instructor.**Cross Listing:** NRSC 604/VIBS 604.**VIBS 605 Chemical Hazard Assessment****Credits 3. 3 Lecture Hours.**

Chemical and biological methods for testing hazardous chemicals and complex mixtures; chemical analysis; microbial bioassays; developmental toxicity; enzyme induction; mammalian cell culture.

Prerequisite: Graduate classification.

VIBS 606/NRSC 605 Neuroanatomical Systems**Credits 3. 3 Lecture Hours.**

Emphasis on major neural systems that govern identifiable physiological functions, behavior and neurodegenerative disease; whole-brain anatomy is approached from a "systems" perspective, wherein components of defined functional systems are described in terms of their location, inputs and outputs, and physiological/behavioral significance in health and disease.

Prerequisite: Approval of instructor.**Cross Listing:** NRSC 605/VIBS 606.**VIBS 607 Applied Epidemiology****Credits 3. 3 Lecture Hours.**

Introduction to the application of epidemiological concepts to the study of disease occurrence in populations of lower animals and man; identify the host, agent and environmental determinants and dynamics of disease spread that provide the basis for successful preventive medicine and public health programs.

Prerequisite: Graduate classification.**VIBS 608 Epidemiology Methods I****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Epidemiology concepts and methods used in the investigation of determinants of health or disease in populations; stressing basic methods for experimental design, conduct and analysis of both observational and experimental studies.

Prerequisite: STAT 651 or equivalent.**VIBS 609 Anatomy of Reproductive Systems****Credits 4. 2 Lecture Hours. 6 Lab Hours.**

Gross and microscopic anatomy of the reproductive systems of domestic animals.

Prerequisite: VIBS 601 or VIBS 602 or VIBS 910 or equivalent. (Offered in alternate years.)**VIBS 610/VTMI 610 Epidemiologic Methods II and Data Analysis****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Principles and methods for the analysis of data from epidemiologic studies including the purpose of data analysis and role of statistics, sampling distributions, probability distributions, analysis of crude, stratified and matched data, and the use of linear and logistic regression methods.

Prerequisites: VIBS 608 and STAT 651 or approval of instructor.**Cross Listing:** VTMI 610/VIBS 610.**VIBS 611 Tumor Cell Biology and Carcinogenesis****Credits 3. 3 Lecture Hours.**

Basic principles of tumor biology; role of gene-environment interactions; molecular mechanisms regulating cancer initiation and progression; therapeutic treatment of cancer.

Prerequisites: BIMS 320/GENE 320 or equivalent; graduate classification.**VIBS 612 Mammalian Embryology****Credits 3. 3 Lecture Hours.**

Embryology of domestic mammals; gametogenesis, fertilization, cell proliferation and differentiation, and organogenesis; selected commonly occurring congenital defects of domestic animals used to emphasize embryologic sequences and processes.

Prerequisite: Approval of instructor.**VIBS 613 Evolutionary Bioinformatics****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Principles and concepts in molecular evolution, population genetics, and evolutionary genomics; applications of quantitative approaches (computation, statistics, and mathematics) in analyzing large and complex biological data sets; algorithm design and development of scientific software using high-level high-performance computer languages; emerging techniques for integrative data analysis, and the assumptions, advantages, and limitations of these techniques.

Prerequisites: BIOL 451 or GENE 320/BIMS 320/BIMS 320/GENE 320 or equivalent; or approval of instructor.**VIBS 615 Food Hygiene****Credits 4. 3 Lecture Hours. 4 Lab Hours.**

Clinical description, pathogenesis, diagnosis, source, epidemiology and prevention or control of food borne diseases caused by biological, chemical and natural hazards.

Prerequisite: Graduate classification.**VIBS 616 Advanced Developmental Neurotoxicology****Credits 3. 3 Lecture Hours.**

Study of mechanisms of toxicity of substances potentially devastating to the developing brain and spinal cord including lead, mercury and other heavy metals, alcohol, nicotine (smoking), pesticides, flame retardants, and others.

Prerequisite: Approval of instructor.**VIBS 617 Cell Biology****Credits 1 to 5. 1 to 5 Lecture Hours.**

Series of five 1-hour credit modules focusing on selected aspects of structure, function, and signal transduction in eukaryotic cells through critical analysis of recent literature in the field. Each module listed as separate course section; students may enroll in up to five 1-hour module sections per semester.

Prerequisite: Approval of instructor.**VIBS 619 Food Toxicology II****Credits 3. 3 Lecture Hours.**

Public health implications of toxic factors in foods, their source, nature, occurrence and distributions; emphasis on mycotoxins including their isolation, detection, identification and toxicology; study of state-of-the-art food safety research techniques.

Prerequisite: Graduate classification.**VIBS 620/GENE 620 Cytogenetics****Credits 3. 3 Lecture Hours.**

Examination and analysis of variation in chromosome structure, behavior and number; developmental and evolutionary effects of this variation.

Prerequisite: GENE 603.**Cross Listing:** GENE 620/VIBS 620.**VIBS 621/NRSC 621 Fundamental Neuroanatomy****Credits 4. 4 Lecture Hours.**

A comprehensive review of the neuroanatomical determinants of function; rigorous neuroanatomical foundation relevant for research investigating changes in neural pathways and/or networks involved in sensory and motor functions, learning and memory, perception, selective attention, as well as recovery of function following brain damage.

Cross Listing: NRSC 621/VIBS 621.

VIBS 622 Endocrine Toxicology**Credits 4. 4 Lecture Hours.**

Impacts of endocrine toxicology on endocrine system; prevalence, environmental and occupational use and disposal of environmental endocrine disrupting chemicals (EDCs); structure, toxicokinetics and mechanism of action of EDCs; effects of EDCs on the development and function, disorders and diseases of the endocrine and reproductive organs.

Prerequisite: Graduate classification; approval of instructor.

VIBS 624/VTPP 624 Endocrinology**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Neuroendocrine control of puberty menstruation, ovulation, pregnancy, labor, lactation, female reproductive cycles, male reproductive functions, thyroid and parathyroid, adrenal and kidney, diabetes, obesity, sleep, memory, learning and aging, and their endocrine disorders; overview on biosynthesis, transport and signaling of peptide and neuropeptide hormones, steroids and prostaglandins.

Prerequisite: Graduate classification.

Cross Listing: VTPP 624/VIBS 624.

VIBS 626/ENTO 626 Methods in Vector-Borne Disease Ecology**Credits 3. 1 Lecture Hour. 5 Lab Hours.**

Methodological understanding of how vector-borne disease are studied in the field and the laboratory; hands-on exploration of the ecology of disease systems in a one health framework; concepts of design, execution, and presentation of research projects; outdoor field work and bio-safety level 2 laboratory.

Cross Listing: ENTO 626/VIBS 626.

VIBS 627 Optical Microscopy and Live Cell Imaging**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Principles and practice of optical microscopy for life sciences; applications with fixed samples and live cells using digital microscopy, confocal and multiphoton microscopy, TIRF and laser capture microscopy equipment; applications with fluorescence probes of cellular function.

Prerequisite: Approval of instructor.

VIBS 633 Animal Diseases in Comparative Medicine**Credits 3. 3 Lecture Hours.**

Study of major zoonotic diseases, including frequency of occurrence, clinical signs, diagnosis, epidemiology, bioterrorism concerns and the prevention or control in animals and humans.

Prerequisite: Graduate classification.

VIBS 640/NRSC 640 Neurobiology**Credits 1 to 5. 1 to 5 Lecture Hours.**

Biology of the mammalian central nervous system with emphasis on cellular and molecular interactions; contemporary research topics in areas such as neuron-glia interactions, neuroimmunology, neuroendocrinology, developmental neurobiology and neurogenetics; extensive readings from primary literature.

Prerequisites: Undergraduate or graduate cell biology, genetics and biochemistry or approval of instructor.

Cross Listing: NRSC 640/VIBS 640.

VIBS 641 Principles of Human Health Risk Assessment of Chemicals**Credits 3. 3 Lecture Hours.**

Principles of toxicology and environmental health with the basic concepts and approaches for conducting human health risk assessment of chemicals; use of different types of data and analysis approaches to conduct both qualitative and quantitative assessments of exposure, human health hazard, dose-response, and risk from chemicals in the environment; introduction to how risk assessment informs risk management decisions such as pollution regulations or hazardous waste cleanups.

Prerequisites: Graduate classification.

VIBS 642 Histological Research Methods**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Theoretical information and practical experiences; learn and perform proper procedures used in biomedical research including tissue fixation, processing and embedding tissue samples, sectioning and staining protocols for standard and special stains.

Prerequisites: Graduate classification or approval of instructor.

VIBS 645 Practice of Evaluating Human Health Risks of Chemicals**Credits 2. 2 Lecture Hours.**

Basic principles of toxicology and environmental health with real-life examples of how diverse types of information are integrated for the purpose of judging what chemical exposures may pose a risk to human health; the complex process of qualitative evaluation and quantitative estimation of the risks that chemicals in the environment may pose to humans; integration of knowledge across epidemiology, toxicology, exposure assessment and other disciplines necessary to paint a comprehensive picture of what chemicals may pose hazard, what level of exposure may be considered safe, and what are the mechanisms of the adverse effects of exposures to a particular hazardous agent.

Prerequisites: BICH 601, BICH 602, VTPP 625, or similar; VTPP 673, VIBS 670, or similar; and VIBS 641.

VIBS 650 Education in a Veterinary Medical and Biomedical Environment**Credits 1 to 3. 1 to 3 Lecture Hours.**

Philosophical, stylistic and methodological consideration for designing, planning implementing and evaluating effective veterinary medical and biomedical teaching and learning. Orientation for graduate school.

Prerequisite: Graduate classification.

VIBS 655 Methods of Specialized Journalism**Credits 3. 3 Lecture Hours.**

Writing and placement of magazine and journal articles in specialized areas of media content such as agriculture, ecology, science, business, education, natural resources; individual projects directed to student's field of interest.

VIBS 657 Issues in Science and Technology Journalism**Credits 3. 3 Lecture Hours.**

Current issues, fundamental concepts in science and technology journalism, communication theory, science and journalism components, philosophy and literature of the field.

VIBS 658 Research Methods in Science and Technology Journalism**Credits 3. 3 Lecture Hours.**

Research methods including theory, hypothesis formulation, design, data collection, data analysis, measurement and report writing. Qualitative and quantitative methods. Research topics.

VIBS 660 Reporting Science and Technology**Credits 3. 3 Lecture Hours.**

Gathering, writing and editing complex information, translation techniques, interpretation and analysis, literary and organizational devices and measurement of readability.

VIBS 663 Biomedical Reporting
Credits 3. 3 Lecture Hours.

Sources of biomedical information, specialized information-gathering skills, key biomedical vocabulary/concepts, audiences, outlets, translation/interpretation, research, ethical issues.

VIBS 664 Risk and Crisis Reporting
Credits 3. 3 Lecture Hours.

Assessment and analysis of environmental and health risk, analytical procedures, interpretation of risk factors, reporting science crisis events.

VIBS 665 Science Editing
Credits 1 to 3. 1 to 3 Lecture Hours.

Editing materials both for segments of the public and for readers in scientific and technical fields.

Prerequisites: Graduate classification or approval of instructor.

VIBS 670 Advanced Toxicology
Credits 3. 3 Lecture Hours.

Toxic effects of drugs and chemicals on major mammalian organ systems and ecological receptors; general principles of toxicokinetics and toxicodynamics; case studies of toxic effects of environmental exposures.

Prerequisite: VIBS 602 or approval of instructor.

VIBS 676 Speciation Genetics
Credits 3. 3 Lecture Hours.

Introduction to the ability to speciate into biologically diverse forms via microevolutionary processes; literature on the origin of species beginning with Darwin and continuing through contemporary work; overview of several major topics in speciation with special emphasis on the genetics of speciation in this genomic era.

Prerequisites: GENE 603 and BIOL 610 or BIOL 466, or equivalent.

Cross Listing: EEEL 676 and GENE 676.

VIBS 681 Seminar
Credit 1. 1 Lecture Hour.

Review and discussion of current scientific work in one of the department's areas of specialization (anatomy, cellular and molecular biology, epidemiology, food safety, genetics, informatics, neuroscience, public health concepts, reproduction/developmental biology, toxicology, zoonoses).

VIBS 684 Professional Internship
Credits 1 to 4. 1 to 4 Other Hours.

A directed internship in an organization to provide students with on-the-job training with professionals in settings appropriate to the student's professional objectives.

Prerequisite: Approval by committee chair.

VIBS 685 Directed Studies
Credits 1 to 4. 1 to 4 Other Hours.

Research problem in one of the department's areas of specialization (anatomy, cellular and molecular biology, epidemiology, food safety, genetics, informatics, neuroscience, public health concepts, reproduction/developmental biology, toxicology, zoonoses, science and technology journalism).

VIBS 688 Epidemiological Modeling of Infectious Diseases
Credits 3. 2 Lecture Hours. 2 Lab Hours.

Concepts of mathematical modeling of infectious diseases; steps and methods for the development and analysis of models.

Prerequisite: Graduate classification.

VIBS 689 Special Topics in...
Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.

Selected topics in one of the department's areas of specialization (anatomy, cellular and molecular biology, epidemiology, food safety, genetics, informatics, neuroscience, public health concepts, reproduction/developmental biology, toxicology, zoonoses, science and technology journalism).

VIBS 690 Theory of Research
Credits 3. 3 Lecture Hours.

Theory and design of research related to current biomedical problems especially those involving study of animal disease; philosophical perspectives underlying historical advances in research pertaining to the study, prevention and treatment of disease. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Graduate classification.

Cross Listing: NRSC 690, VPAT 690 and VTPP 690.

VIBS 691 Research
Credits 1 to 23. 1 to 23 Other Hours.

Research reported by writing of thesis or dissertation as partial requirement for MS or PhD degree.

Prerequisite: Approval of department head.

VIBS 910 Small Animal Anatomy
Credits 4. 2 Lecture Hours. 6 Lab Hours.

Nomenclature, structures and principles of functional anatomy of dogs and cats; emphasis on topographical, radiographic and functional anatomy of structures with clinical importance.

Prerequisite: Enrollment in first year of professional DVM curriculum.

VIBS 911 Histology
Credit 1. 1 Lecture Hour.

Clinical application of histological content; basic tissues and major organ systems of common domestic species; normal microscopic appearance of cells, tissues and organs with the introduction of normal tissue and organ cytology; content correlates gross anatomy, microscopic anatomy and the physiological state of common domestic species.

Prerequisite: Enrollment in first year of professional DVM curriculum.

VIBS 912 Clinical Anatomy of Large Animals
Credits 3. 2 Lecture Hours. 4 Lab Hours.

Gross and topographical anatomy of domestic livestock including equine, ruminant, porcine and avian gross anatomy through use of cadavers, models and images; emphasis on structures of clinical importance, relationships to common medical and surgical procedures and functions in the animal body.

Prerequisite: Enrollment in first year of professional DVM curriculum.

VIBS 913 Microscopic Anatomy II
Credits 4. 2 Lecture Hours. 6 Lab Hours.

Developmental anatomy of domestic animals with special emphasis on structural congenital defects; functional neuroanatomy and clinical neurology of domestic animals; essential clinical skills for the theory and practice of veterinary neurology.

Prerequisite: Enrollment in first year of professional curriculum.

VIBS 914 Professional & Clinical Skills II**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Professional & Clinical Skills II. Integration and reinforcement of foundational knowledge offered in concurrent courses through critical thinking exercises, professional skills application activities (ethics/contextual decision-making, leadership, skills for well-being, personal/practice financial literacy, core communication skills) and application of technical skills; opportunities for learning include didactic, hands-on, and case-based interactions utilizing simulation, models, animals, actors and case scenarios; part II of a VI part series.

Prerequisites: Enrollment in the first year of professional DVM curriculum.**VIBS 926 Introduction to Public Health Concepts****Credit 1. 1 Lecture Hour.**

Basic concepts and issues of public health as they relate to the veterinary medical profession.

Prerequisite: Enrollment in first year of the professional curriculum.**VIBS 928 Public Health, Epidemiology and Evidence-Based Medicine****Credits 3. 3 Lecture Hours.**

Basic principles of epidemiology, public health, zoonoses and introduction to evidence-based medicine methodology, its application in clinical decision making; emphasis on synthesis of basic principles; application of evidence-based medicine; and epidemiological skills within the context of private and public veterinary practice.

Prerequisites: Enrollment in the second year of professional curriculum.**VIBS 930 Public Health****Credits 4. 4 Lecture Hours.**

Principles and applications of epidemiology in veterinary medicine and the literature; history, epidemiology, symptoms, prevention and control of diseases transmitted between animals and humans; emphasis on emerging zoonotic diseases presenting occupational hazards for veterinary medicine; safety of foods of animal origin including foodborne illnesses.

Prerequisite: Enrollment in third year of professional curriculum or enrollment in graduate studies with approval of instructor.**VIBS 936 Veterinarians in Society****Credits 2. 2 Lecture Hours.**

The breadth of career opportunities in veterinary medicine; the diversity of roles that veterinarians play in society including companion animal practice, large animal practice, public health, biomedical research, conservation medicine, emergency response and shelter medicine.

Prerequisite: Enrollment in first year of professional DVM curriculum.**VIBS 948 Didactic Electives in Veterinary Anatomy****Credits 1 to 12. 1 to 12 Lecture Hours.**

Elective course in veterinary anatomy (with emphasis on neuroscience, cell biology, genetics, reproduction, developmental biology, marine mammal anatomy) for professional students who wish to supplement required curriculum. May be repeated for credit.

Prerequisite: Enrollment in third year of professional curriculum.**VIBS 985 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of a selected problem in veterinary anatomy (with emphasis on neuroscience, cell biology, genetics, reproductive biology, developmental biology, or marine mammal anatomy) or directed individual study of advanced topics in veterinary public health or epidemiology (with emphasis on food safety, toxicology, informatics, or zoonoses). May be repeated for credit.

Prerequisite: Matriculation in veterinary professional curriculum.**VIBS 989 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of veterinary anatomy (with emphasis on neuroscience, cell biology, genetics, reproductive biology, developmental biology or marine mammal anatomy) or selected topics in veterinary public health, epidemiology, zoonoses, food hygiene and food toxicology.

Prerequisite: Matriculation in veterinary professional curriculum.

VIZA - Visualization

VIZA 611 Concepts of Visual Communications I**Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Theory and practice of visual communication using a variety of media to explore perception, form-making, color, and historic and personal sources of creativity.

Prerequisite: Graduate classification in visualization or approval of instructor.**VIZA 612 Concepts of Visual Communications II****Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Exploration of perception, vision and self-expression for communication through visual images; image-making processes include conventional and digital media.

Prerequisite: Approval of instructor.**VIZA 613 3-D Modeling and Animation****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Principles of 3-D computer animation with an emphasis in aesthetics and techniques for 3-D modeling, color, texture, lighting, motion control and rendering.

Prerequisite: Graduate classification in visualization or approval of instructor.**VIZA 614 Form/Installation/Environment****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Aesthetic and functional concerns involving public spaces; interdisciplinary investigation of audible, visual and form potential of environmental space utilizing models and electronic imaging technology; ethical responsibilities regarding the environment and its use.

Prerequisite: Graduate classification or approval of instructor.**VIZA 615 Computer Animation****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Intermediate level computer animation—focusing on production of three dimensional computer generated animation which may or may not integrate video and photographic elements.

Prerequisite: VIZA 613 or approval of instructor.**VIZA 616 Rendering and Shading****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Exploration of advanced rendering and shading techniques for the attainment of a desired visual effect; topics may include shading languages, attainment of visual realism, integration of rendering and modeling tools, and non-photorealistic rendering.

Prerequisite: VIZA 613 or approval of instructor.

VIZA 617 Advanced Animation**Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Development of advanced three-dimensional computer animation with emphasis on successful storytelling and visual communication; may include story development, expressive character design, motivation, acting, speech animation, choreography, stage lighting, storyboards, soundtracks, story reels, production efficiency, and successive refinement. May be taken twice.

Prerequisite: VIZA 613 or approval of instructor.**VIZA 618 Facial Modeling and Animation****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Design and analysis of articulated 3D models for creating facial animation; includes designing expressive 3D faces, exaggerations, facial expressions and facial animation techniques.

Prerequisite: VIZA 613 or approval of instructor.**VIZA 622 Design Communication I****Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Theory and practice of visual communication employing a variety of digital and conventional media; emphasis on creating effective, self-expressive images employing the combined use of a variety of media.

Prerequisites: VIZA 465 or equivalent; graduate classification or approval of instructor.**VIZA 623 Design Communication II****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Development of concepts and forms in visual communications; organization of complex problems in production; synthesis of skills, information tools and methodology.

Prerequisite: VIZA 622 or approval of instructor.**VIZA 625 Multi-Media Web Design****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Examination of aesthetic, narrative, technical strategies; multi-media content on the web; methods of integrating imagery, animation, sound; non-linear multi-media narration. Application of multi-media techniques for navigation, interaction, animation, vector drawing, video, audio.

Prerequisite: Graduate classification in visualization or approval of instructor.**VIZA 626 Generative Art and Design****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Theory and creative application of generative systems in studio art practice; chance based systems include random numbers and noise; biologically inspired systems include genetic algorithms, L-systems, and artificial life; systems drawn from complexity theory include, cellular automata, fractals, finite state machines, catastrophe theory, reaction diffusion systems, and chaos. May be taken 2 times for credit.

Prerequisite: Graduate classification in visualization or approval of instructor.**VIZA 627 Design Communication III****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Advanced methods in video, photography and/or animation production; application of image strategies used in contemporary media. May be taken twice.

Prerequisites: VIZA 613 or VIZA 622 or VIZA 643; approval of instructor.**VIZA 629 Digital Media: Inspiration and Process****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Exploration of artwork and literature that has informed contemporary creativity provides a broad basis for discovery through reading, writing, studio projects; demonstrate a knowledge of creative strategies including, but not limited to mapping, database, allegory, sampling, and generative systems.

Prerequisite: Graduate classification or approval of instructor.**VIZA 630 Contemporary Art Studio/Seminar I****Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Critical, theoretical and historical readings on art and artists prompt visual and textual responses; development of personal ideas, methods, and processes; research, writing, discussion and preliminary studies contribute to a final, in-depth body of work situated within the context of contemporary art.

Prerequisite: Graduate classification in visualization or approval of instructor.**VIZA 631 Contemporary Art Studio/Seminar II****Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Theoretical and critical tools for contemporary digital art practice and technology-based cultural production; project proposal and development; exhibition planning, site selection and installation.

Prerequisite: VIZA 630 or approval of instructor.**VIZA 641 Visual Storytelling****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Exploration of visual storytelling techniques for the attainment of desired storytelling effects; includes character development, using shots, camera, lights, props and background elements, master plots, one and multi-panel cartoons, comics, storyboards, animatics and storyreels.

Prerequisite: Graduate classification or approval of instructor.**VIZA 643 Time Based Media I****Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Visual language and cinematic structure explored through time based projects; historical, critical, and practical exploration of the interaction of camera, lighting, sound, editing, special effects, and mise en scene.

Prerequisites: VIZA 465 or equivalent; graduate classification in visualization or approval of instructor.**VIZA 644 Time Based Media II****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Advanced theory and production of art forms with motion, tempo, sequencing and duration as integral components; projects may include in-depth creation using a single medium or may emphasize a combination of media such as video, audio, networked communication, animation, performance or installation. May be taken twice.

Prerequisite: VIZA 643 or approval of instructor.**VIZA 647 Color Photography****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Theory and practice of still color photography; appropriate uses of color processes related to digital photography and other graphic media; exploration of vision through the photographic image as a medium of self expression. May be taken two times for credit.

Prerequisite: Graduate classification or approval of instructor.

VIZA 654/CSCE 646 The Digital Image**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Tools and techniques for generation, handling and analysis of two dimensional digital images; image representation and storage; display, media conversion, painting and drawing; warping; color space operations, enhancement, filtering and manipulation.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** CSCE 646/VIZA 654.**VIZA 656/CSCE 647 Image Synthesis****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Principles of image synthesis from 3-D scene descriptions; topics may include local and global illumination, shading, shadow determination, hidden surface elimination, texturing, raster graphics algorithms, transformations and projections.

Prerequisite: Approval of instructor.**Cross Listing:** CSCE 647/VIZA 656.**VIZA 657/CSCE 648 Computer Aided Sculpting****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Mathematical and artistic principles of 3-D modeling and sculpting; includes proportion skeletal foundation, expression and posture, line of action; curves, surfaces and volumes, interpolation and approximation, parametric and rational parametric polynomials, constructive solid geometry, and implicit representation.

Prerequisite: Approval of instructor.**Cross Listing:** CSCE 648/VIZA 657.**VIZA 658 Experimental Visual Techniques****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Theory and experimental techniques for computer graphics, animation, video, and other forms of electronic visualization including innovative hardware and software systems, artificial life, virtual reality, volume methods and hypermedia. May be taken twice.

Prerequisite: Graduate classification or approval of instructor.**VIZA 659/CSCE 649 Physically-Based Modeling****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Physical simulation as used in choreography, geometric modeling, and the creation of special effects in computer graphics; a variety of problems and techniques are explored which may include particle-methods, modeling and simulation of flexible materials, kinematics and constraint systems.

Prerequisite: Approval of instructor.**Cross Listing:** CSCE 649/VIZA 659.**VIZA 662 Physical Computing for Art and Design****Credits 3. 1 Lecture Hour. 4 Lab Hours.**

Theory and creative application of digital technology in studio art and design practice to create dynamic environments, interactive objects, and tangible interfaces in the physical world; technologies involved include microcontrollers, basic electronics, sensors, actuators, motors, wireless and internet data communication, light, sound, and wearable devices. May be taken 2 times for credit.

Prerequisites: Graduate classification in Visualization or approval of instructor.**VIZA 665 Digital Compositing****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Principles of Digital Compositing—Image based lighting and modeling, camera calibration, shape reconstruction, reconstruction of transparency and specularly and digital compositing of computer generated animations with video images.

Prerequisite: VIZA 613 or approval of instructor.**VIZA 670/CSCE 620 Computational Geometry****Credits 3. 3 Lecture Hours.**

Design and analysis of algorithms for solving geometrical problems; includes convex hull problems, Voronoi diagrams, range searching and proximity problems.

Prerequisite: CSCE 311 or approval of instructor.**Cross Listing:** CSCE 620/VIZA 670.**VIZA 672/CSCE 641 Computer Graphics****Credits 3. 3 Lecture Hours.**

Representation of 3-dimensional objects, including polyhedral objects, curved surfaces, volumetric representations and CSG models' techniques for hidden surface/edge removal and volume rendering; illumination and shading; antialiasing; ray tracing; radiosity; animation; practical experience with state-of-the-art graphics hardware and software.

Prerequisite: CSCE 441 or approval of instructor.**Cross Listing:** CSCE 641/VIZA 672.**VIZA 673/CSCE 643 Robotics Programming****Credits 3. 3 Lecture Hours.**

Manipulator dynamics, position control, hybrid position/force control, and impedance controls; advanced topics in manipulator motion planning, assembly planning and grasp planning; cell decomposition; retraction; back projection; hypothesize-and-test; and potential field methods; subassembly stability; task-level and fine motion planning; grasp stability; grasp synthesis; dexterous manipulation.

Prerequisite: CSCE 452 or approval of instructor.**Cross Listing:** CSCE 643.**VIZA 675/CSCE 645 Geometric Modeling****Credits 3. 3 Lecture Hours.**

Geometric and solid modeling concepts, Freeform curves and surfaces (splines and BeZier) with their relational, intersectional and global mathematic properties; parametric representation of solids, topology of closed curved surfaces, boundary concepts and Boolean/Euler operators; construction and display of curves and surfaces, and solid models.

Prerequisites: CSCE 441 and CSCE 442 or equivalent.**Cross Listing:** CSCE 645/VIZA 675.**VIZA 676/CSCE 679 Data Visualization****Credits 3. 3 Lecture Hours.**

Foundation principles of data visualization and hands-on experience in design and evaluation; includes abstract data visualization, 3D visualization, infographics, data narratives, principles of visual data encoding and interaction techniques.

Cross Listing: CSCE 679/VIZA 676.**VIZA 677/CSCE 650 Virtual Reality****Credits 3. 3 Lecture Hours.**

Theory and practice of virtual reality (VR); interactive 3D virtual environments, immersive technology, perceptual realism, and embodied interaction experience; overview of VR with topics including input devices, output devices, 3D interaction techniques, augmented reality, the role of realism in VR, navigation techniques, design guidelines, and evaluation methods; hands-on experience designing VR experiences emphasizing application, demonstration, or research purposes.

Cross Listing: CSCE 650/VIZA 677.**VIZA 679 Advanced Topics in Physically Based Modeling****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Current research and advanced methods in choreographing motion for animation using a physics-based approach; mainstream research literature in animation; theoretical and methodological topics addressed, through both study and implementation. May be taken twice.

Prerequisite: Graduate classification or approval of instructor.

VIZA 680 Professional Practice in Visualization**Credits 4. 2 Lecture Hours. 4 Lab Hours.**

Preparation of a portfolio, creating an internet presence, use of social media, interviews, negotiation, business practices, and fundamentals of teaching. Professional practice in pursuit of career paths for the Master of Fine Arts in Visualization.

Prerequisites: Graduate classification in visualization and approval of instructor.

VIZA 684 Professional Internship**Credits 3. 3 Lecture Hours.**

Practical experience in a studio/museum/gallery setting working with allied professionals; minimum fifteen week internship with a minimum of 600 hours continuous employment; departmental pre-approval through the departmental internship coordinator required; post approval evaluation conducted following the internship. May not be repeated for credit.

VIZA 685 Directed Studies**Credits 1 to 6. 1 to 6 Other Hours.**

Individual problems involving application of theory and practice in Visualization. May be repeated for credit.

Prerequisites: Approval of instructor and department head.

VIZA 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified field of design communication and/or electronic media. May be repeated for credit.

VIZA 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for preparation of MS thesis.

Prerequisites: Graduate classification in visualization and approval of instructor.

VIZA 693 Professional Study**Credits 1 to 9. 1 to 9 Other Hours.**

Research and writing combined with MFA studio projects; prepare and present a public exhibition of a final body of work; submit a related scholarly journal paper as approved by the committee chair. May be repeated for credit.

Prerequisites: Graduate classification in visualization and approval of instructor.

VLCS Vet Large Animal Clin. Sc

VLCS 622 Equine Epidemiology and Infectious Diseases**Credits 3. 3 Lecture Hours.**

Principles and methods of epidemiology applied to equine health and prevention and control of selected equine infectious diseases.

Prerequisites: Enrollment in equine certificate and graduate classification, or approval of instructor.

VLCS 681 Seminar**Credit 1. 1 Lecture Hour.**

Oral communication of current research and selected topics in large animal veterinary medicine and clinical research methodology to include lectures, presentations, interviews, and discussions.

Prerequisite: Approval of instructor.

VLCS 685 Directed Studies**Credits 1 to 8. 1 to 8 Other Hours.**

Original investigations of problems in the field of large animal surgery, therapeutics, preventive veterinary medicine or radiology. May be repeated for credit.

Prerequisites: Approval of instructor.

VLCS 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

VLCS 910 Integrated Animal Care II**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Foundation in companion animal and large animal veterinary care; focus on day-one veterinary wellness and preventive care and herd-health concepts; exposure includes companion animal species, common large animal species, pocket pets, reptiles, camelids, miniature pigs and birds; clinical application of topics including neonatal care, husbandry practices, animal behavior, parasite prevention, immunization protocols and healthy animal nutrition.

Prerequisites: Enrollment in the first year of professional DVM curriculum.

VLCS 924 Diagnostic Imaging & Interpretation I**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Diagnostic Imaging & Interpretation I. Fundamentals of diagnostic evaluation of radiographic and ultrasonographic images in companion animals; focus on importance of diagnostic and therapeutic imaging.

Prerequisite: Enrollment in the second year of professional DVM curriculum.

VLCS 925 Diagnostic Imaging & Interpretation II**Credits 2. 2 Lecture Hours.**

Diagnostic Imaging & Interpretation II. Fundamentals of diagnostic evaluation of radiographic and ultrasonographic images in small and large animals; focus on importance of diagnostic and therapeutic imaging.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 926 Professional & Clinical Skills IV**Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Professional & Clinical Skills IV. Integration and reinforcement of foundational knowledge offered in concurrent courses through critical thinking exercises, professional skills application activities (ethics/contextual decision-making, leadership, skills for well-being, personal/practice financial literacy, core communication skills), and application of technical skills; opportunities for learning include didactic, hands-on and case-based interactions utilizing simulation, models, animals, actors and case scenarios; part IV of a VI part series.

Prerequisite: Enrollment in the second year of professional DVM curriculum.

VLCS 930 Advanced Equine Medicine and Surgery**Credits 3. 3 Lecture Hours.**

Advanced diagnostic techniques and management strategies for species specific disorders of horses.

Prerequisite: Enrollment in the third year of professional curriculum.

VLCS 931 Advanced Ruminant Medicine and Surgery**Credits 2. 2 Lecture Hours.**

Advanced diagnostic techniques and management strategies for species specific disorders of ruminant species.

Prerequisite: Enrollment in the third year of professional curriculum.

VLCS 932 Advanced Ruminant Herd Health and Production**Credits 2. 2 Lecture Hours.**

Principles needed to provide veterinary services to populations of ruminants including preventive health programs, record keeping and approaches to controlling herd/flock disease outbreak or production shortfalls.

Prerequisite: Third year veterinary student.

VLCS 940 Large Animal Clinics I**Credits 2. 35 Lab Hours.**

Student participation with clinical cases in the large animal medicine services of the Veterinary Teaching Hospital. Must be taken two times.

Prerequisite: Fourth year classification in veterinary medicine or approval of department head.

VLCS 941 Large Animal Clinics II**Credits 2. 35 Lab Hours.**

Student participation with clinical cases in the large animal surgery services of the Veterinary Teaching Hospital. Must be taken two times.

Prerequisite: Fourth year classification.

VLCS 945 Advanced Large Animal Clinical Elective**Credits 2. 35 Lab Hours.**

Student participation with clinical cases for advanced study in selected services from the large animal medicine, surgery, theriogenology and field services of the Veterinary Teaching Hospital. May be taken 12 times.

Prerequisite: Fourth year classification.

VLCS 948 Large Animal Medicine and Surgery Elective**Credits 1 to 12. 1 to 12 Lecture Hours.**

In-depth study of selected disease processes in the various disciplines of large animal medicine and surgery will be conducted emphasizing management, diagnostics and medical or surgical treatment. May be repeated for credit.

Prerequisite: Third year classification in veterinary medicine or approval of department head.

VLCS 953 Large Animal Clinical Skills**Credit 1. 4 Lab Hours.**

Acquisition of basic technical skills useful in the diagnosis and treatment of large animals in general veterinary practice. Modular one month course.

Prerequisite: Third year classification in veterinary medicine in good standing.

VLCS 954 Large Animal Medicine**Credits 6. 5 Lecture Hours. 4 Lab Hours.**

Medical disease of large animals; pathophysiology, diagnosis and therapy of diseases in large animals.

Prerequisite: Third year classification in veterinary medicine in good standing.

VLCS 956 Large Animal Diagnostics & Therapeutics I**Credits 3.5. 3.5 Lecture Hours.**

Large Animal Diagnostics & Therapeutics I. Foundational content for the diagnosis, treatment and prevention of common diseases and conditions of horses, cattle, sheep, goats, pigs and poultry; promotes successful entry into large animal and rural practice.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 957 Large Animal Diagnostics & Therapeutics II**Credits 3.5. 3.5 Lecture Hours.**

Large Animal Diagnostics & Therapeutics II. Foundational content for the diagnosis, treatment and prevention of common diseases and conditions of horses, cattle, sheep, goats, pigs and poultry; promotes successful entry into large animal and rural practice.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 958 Career-Focus Tracking I - Food Animal**Credits 2. 2 Lecture Hours.**

Promote integration of previous and concurrent curricular content to diagram successful approaches to developing herd health plans, investigating and controlling herd production shortfalls and investigating disease outbreaks; opportunities to gain experience in communicating effectively with producers in written and verbal formats; didactic and hands-on observation of production systems on farms to offer interactions with producers and veterinary professionals; primary focus on domestic livestock production system components which may be applied to any species population system.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 959 Clinical Focus-Tracking I - Equine**Credits 2. 2 Lecture Hours.**

Application of advanced topics in pathophysiology, diagnostics, medical and surgical management and prevention of equine diseases; emphasis on case-based learning and problem-solving skills.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 960 Clinical Focus-Tracking II - Equine**Credits 2. 2 Lecture Hours.**

Application of advanced topics in pathophysiology, diagnostics, medical and surgical management and prevention of equine diseases; emphasis on case-based learning and problem-solving skills.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 961 Career-Focus Tracking II - Food Animal**Credits 2. 2 Lecture Hours.**

Problem-solving of clinical herd and individual animal cases for beef and dairy cattle and small ruminants; builds on medical and surgical diseases of the ruminant, swine from large animal diagnostics and therapeutics and food animal career-focus tracking I.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VLCS 985 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of a selected problem in large animal medicine, surgery or radiology. May be repeated for credit.

Prerequisites: Enrollment in veterinary medicine and approval of the department head.

VMID - Vet Medicine-Interdisc.

VMID 601 Veterinary Medicine--Interdisciplinary Study Abroad**Credits 2 to 12. 2 to 12 Lecture Hours.**

For students in approved programs abroad. May be repeated for credit. Maximum 6 hours free elective credit in a graduate program. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Attend TAMU the semester before and after program.

VMID 686 Scientific Ethics**Credit 1. 1 Lecture Hour.**

Ethical issues of research and methods for resolution of such issues; overview of ethical issues encountered by scientists in the conduct and dissemination of their research, in their pursuit of resources, in their interactions with the press and the broader public and resulting from the extension and technological application of their findings.

Prerequisite: Graduate classification.

VMID 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of veterinary medicine. May be repeated for credit.

Prerequisite: Approval of instructor.

VMID 912 Clinical Correlates I**Credit 1. 2 Lab Hours.**

Introduction of clinical terminology and techniques needed to accomplish thorough history taking and physical exam; the problem-oriented medical record will be introduced and then used in system-based reviews; familiarization with clinical techniques appropriate for body system evaluation.

Prerequisite: Enrollment in the first year of professional curriculum.

VMID 913 Clinical Correlates II**Credit 1. 2 Lab Hours.**

Continuation of Clinical Correlates I. Body system review will continue. Clinical exam techniques appropriate for each system will be emphasized and findings discussed in the context of the problem-oriented medical record.

Prerequisite: Enrollment in the first year of professional curriculum.

VMID 915 Veterinary Behavioral Medicine**Credit 1. 1 Lecture Hour.**

Diverse concepts relative to the normal behaviors of domestic animals; abnormal behaviors; and how the knowledge of both can be useful to clients and the staff at veterinary hospitals.

Prerequisite: Enrollment in the first year of the professional curriculum.

VMID 921 Clinical Correlates III**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Developing problem and differential diagnosis lists, using texts, journals and computer databases for information retrieval in clinical problem solving; developing logical diagnostic and therapeutic plans for the diagnosis and treatment of problems in individual and group housed small and large animal patients.

Prerequisite: Enrollment in the second year of professional curriculum.

VMID 922 Clinical Correlates IV**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Continuation of Clinical Correlates III. Builds on and expands the history and physical exam skills introduced in Clinical Correlates I, II, and III.

Prerequisite: Enrollment in the third year of professional curriculum.

VMID 923 General Surgery/Anesthesiology**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Anesthesia, general surgery and dentistry of domestic animals.

Prerequisite: Enrollment in the second year of professional curriculum.

VMID 924 Introduction to Diagnostic Imaging**Credit 1. 1 Lecture Hour.**

Physical properties and production of ionizing radiation as well as production of radiographic images; introduction to image interpretation.

Prerequisite: Enrollment in the second year of professional curriculum.

VMID 925 Diagnostic Imaging Interpretation I**Credits 2. 2 Lecture Hours.**

Diagnostic evaluation of radiographic and ultrasonographic images of large and small animals.

Prerequisite: Enrollment in third year of the professional curriculum.

VMID 926 Diagnostic Imaging Interpretation II**Credits 2. 2 Lecture Hours.**

Continued diagnostic evaluation of radiographic and ultrasonographic images of large and small animals; emphasis on diseases of cardiac, respiratory, gastrointestinal, and urinary systems.

Prerequisite: Enrollment in third year of the professional curriculum.

VMID 927 Community Connections**Credits 2. 35 Lab Hours.**

Clinical rotation emphasizing the veterinarian's role in their local community; focus on relationships with shelter organizations and disaster preparedness training.

Prerequisite: Enrollment in the fourth year of the professional curriculum.

VMID 935 Surgery**Credits 4 to 5. 2 Lecture Hours. 4 to 6 Lab Hours.**

Essential skills needed to anesthetize and perform surgery on animals; focus on administering anesthesia, mastering techniques of abdominal exploratory and basic procedures involving the integumentary, gastrointestinal and urogenital systems.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VMID 936 Surgery II**Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Builds on principles developed in Surgery I including aseptic technique, proper use of surgical instruments and gentle tissue handling with emphasis on basic orthopedic principles.

Prerequisite: Third year classification in veterinary medicine in good standing.

VMID 940 Houston SPCA: Alliance for Animal Welfare and Shelter Medicine**Credits 2. 35 Lab Hours.**

Clinical rotation at the Houston-SPCA, emphasizing the veterinarian's role in all aspects of animal evaluation and care, and the treatment of rescue and shelter animals; emphasis on diseases, disorders, injuries, and treatment needs of diverse species, and exposure to emergency response and high volume animal rescue operations.

Prerequisite: Enrollment in the fourth year of the professional curriculum.

VMID 943 Veterinary Practice: Legal, Ethical and Managerial**Credits 2. 2 Lecture Hours.**

Legal considerations, business principles, management practices, economic factors and medical ethics involving veterinary practice.

Prerequisite: Enrollment in the third year of professional curriculum.

VMID 944 Introduction to Career-Focus Tracking**Credits 4. 4 Lecture Hours.**

In-depth exploration of the purpose and function of animal species cared for by veterinarians and the roles veterinarians play in the health of animals, humans and the environment.

Prerequisite: Enrollment in the second year of professional DVM curriculum.

VMID 945 Advanced Specialty Elective**Credits 4. 35 Lab Hours.**

Advanced elective rotation in a specialized discipline with student participation in advanced science and technology of the discipline in a practicum setting.

Prerequisite: Enrollment in the fourth year of professional curriculum.

VMID 947 Specialty Clinical Rotation**Credits 2. 35 Lab Hours.**

Student participation with clinical cases in the Veterinary Teaching Hospital including small or large animal medicine and surgery services; all fourth year courses are two weeks in length.

Prerequisites: Fourth year classification in veterinary medicine or approval of department head.

VMID 950 Clinical Nutrition**Credits 2. 2 Lecture Hours.**

Nutritional management of medical and surgical cases.

Prerequisite: Enrollment in the second year of professional curriculum.

VMID 952 Clinics I**Credit 1. 4 Lab Hours.**

Student participation on a rotating schedule through clinical services in the veterinary teaching hospital; to be taken once in each semester of the third year of the professional veterinary curriculum.

VMID 953 Clinics II**Credit 1. 4 Lab Hours.**

Student participation on a rotating schedule through clinical services in the veterinary teaching hospital or in a private practice.

Prerequisite: Third year classification in veterinary medicine in good standing.

VMID 960 Diagnostic Radiology I**Credits 2. 35 Lab Hours.**

Practical experience in technical radiography and diagnostic radiology of domestic and zoo animals to include positioning of patients, use of x-ray machines, special diagnostic procedures, radiation safety and interpretation of radiographs.

Prerequisite: Fourth year classification in veterinary medicine or approval of department head.

VMID 962 Veterinary Anesthesia I**Credits 2. 35 Lab Hours.**

Student participation with primarily small animal clinical cases in the management of patients under anesthesia and in the perianesthetic period.

Prerequisite: Fourth year classification in veterinary medicine.

VMID 963 Veterinary Anesthesia II**Credits 2. 35 Lab Hours.**

Student participation with primarily large animal clinical cases in the management of patients under anesthesia and in the perianesthetic period.

Prerequisite: Fourth year classification in veterinary medicine.

VMID 964 Clinical Experience**Credits 3. 6 Other Hours.**

Introduction to the art and practice of clinical veterinary medicine in the Veterinary Medical Teaching Hospital (VMTH) by rotation through services linked to the selected career-focus track (companion animal, equine, food animal); opportunities for clinical experience including integration of didactic content to clinical cases; participation alongside senior veterinary students for clinical case evaluation and treatment; understanding of VMTH policies for sample submission and associated requirements.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VMID 966 Professional and Clinical Skills VI**Credits 4. 8 Lab Hours.**

Integration and reinforcement of foundational knowledge offered in concurrent courses through critical thinking exercises, professional skills application activities (ethics/contextual decision-making, leadership, skills for well-being, personal/practice financial literacy, core communication skills) and application of technical skills; opportunities for learning include didactic, hands-on and case-based interactions utilizing simulation, models, animals, actors and case scenarios; part VI of a VI part series.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VMID 975 Career Alternative Elective**Credits 2 to 16. 2 to 4 Lab Hours.**

Approved student participation in a didactic and/or practicum experience in a unique practice discipline in veterinary medicine, the life sciences or other related areas.

Prerequisites: Enrollment in the fourth year of professional curriculum and approval of individual program.

VMID 980 Clinical Externship**Credits 4. 35 Lab Hours.**

Off-campus clinical practicum in a private veterinary practice, research institution, industry, diagnostic center, zoo, veterinary college or other approved career experience.

Prerequisite: Enrollment in the fourth year of professional curriculum.

VMID 981 Seminar in Professional and Leadership Development**Credit 1. 1 Lecture Hour.**

Major issues in professional, ethical and leadership responsibilities facing a veterinarian in the 21st century; professional ethics and licensing requirements; development of specific leadership skills; leadership styles and effective interpersonal relations required in working with a team of veterinary medical professionals; public leadership role of the veterinarian.

Prerequisite: Admission in the veterinary professional curriculum.

VMID 989 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.**

Selected topics in an identified area of veterinary medicine. May be repeated for credit.

VPAR - Veterinary Parasitology

VPAR 601 Parasitology**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Important helminth parasites of animals and humans; their identification, distribution and life history.

Prerequisites: VTPB 487/BIOL 487 or equivalent or approval of instructor.

VPAR 604 Parasitic Protozoa**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Taxonomy, morphology, life cycle, physiology, distribution, genetics, host relations, methods and diagnosis concerned with protozoan parasites affecting vertebrates including humans.

Prerequisite: VTPB 487/BIOL 487 or ENTO 208 or BIOL 438 or equivalent or approval of instructor.

VPAR 605 Molecular and Immunological Parasitology**Credits 3. 3 Lecture Hours.**

Basic concepts and recent advancement in molecular biology and molecular immunology of parasitic diseases. Molecular-based host-parasite interactions.

VPAR 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Special problems concerned with parasites of animals or humans.

Prerequisites: VPAR 601 or equivalent; approval of instructor.

VPAR 689 Special Topics in...**Credits 3. 3 Lecture Hours.**

Selected topics in an identified area of biomedical parasitology. May be repeated for credit.

VPAR 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

VPAT - Veterinary Pathology

VPAT 601 Comparative Pathology

Credits 4. 3 Lecture Hours. 3 Lab Hours.

Pathologic processes occurring in diseased cells, tissues and organs of animals and humans; their pathogenesis and morphologic manifestations.

Prerequisites: Courses in gross and microscopic mammalian anatomy and physiology and approval of instructor.

VPAT 610 Cell Mechanisms of Disease

Credits 3. 3 Lecture Hours.

Cellular mechanism, morphologic manifestations and clinical presentation of illustrative disease processes.

Prerequisites: Graduate classification with a major in BIMS, VTPB, or BMEN; approval of instructor.

VPAT 640 Mechanisms of Disease

Credits 4. 4 Lecture Hours.

Overview of general pathology concepts and the pathophysiology of these processes.

Prerequisite: DVM degree or equivalent, or approval of instructor.

VPAT 641 Systemic Pathology I

Credits 4. 4 Lecture Hours.

Disease manifestations in special organs and tissues and interrelations of pathologic processes in individual and functionally related organs.

Prerequisite: DVM degree or equivalent.

VPAT 643 Applied Pathology

Credits 1 to 6. 1 to 6 Other Hours.

Application of information and concepts of anatomic and clinical pathology to the diagnosis of animal disease; gross pathological changes observed in necropsy are correlated with and corrected by histopathologic observations; confirmatory methods of clinical pathology and laboratory medicine used where indicated. May be taken more than once but not to exceed 6 hours of credit toward a graduate degree.

Prerequisite: DVM degree or equivalent.

VPAT 645 Neoplastic Diseases

Credits 1 to 8. 1 to 8 Other Hours.

Theoretical, histopathological and clinical aspects of neoplasia. Diagnosis of neoplastic and related conditions in all species. May be taken more than once but not to exceed 8 hours of credit toward a graduate degree.

Prerequisite: DVM degree or equivalent.

VPAT 650 Neuropathology of Animals

Credits 1 to 4. 1 to 4 Other Hours.

Pathology and pathogenesis of diseases of the central and peripheral nervous systems. Interpretation of gross and microscopic lesions of the nervous system associated with disease processes. May be taken more than once but not to exceed 4 hours of credit toward a graduate degree.

Prerequisite: DVM degree or equivalent.

VPAT 651 Systemic Pathology II

Credits 4. 4 Lecture Hours.

Continuation of VPAT 641. Disease manifestations in special organs and tissues and interrelations of pathologic processes in individual and functionally related organs.

Prerequisite: VPAT 641.

VPAT 652 Cell Mechanisms of Disease

Credits 3. 3 Lecture Hours.

Basic cellular mechanisms and general manifestations of disease; illustration of clinical and anatomical/morphological aspects of various diseases.

Prerequisites: Graduate classification; enrollment in BIMS or BMEN curriculum; approval of instructor.

VPAT 653 Diseases of Laboratory Animals

Credits 3. 3 Lecture Hours.

Pathology and pathogenesis of spontaneous infectious, parasitic, metabolic and neoplastic diseases of laboratory animals.

Prerequisite: VTPB 922 or equivalent.

VPAT 654 Fundamentals in Laboratory Animal Medicine

Credits 2. 2 Lecture Hours.

Knowledge of the biology, management, and diseases of laboratory animals; preparation of comparative medicine residents for the board certifying examination of the American College of Laboratory Animal Medicine (ACLAM).

Prerequisites: DVM degree and acceptance into the laboratory animal residency program; or approval of instructor.

VPAT 655 Contemporary Topics in Laboratory Animal Medicine

Credit 1. 1 Lecture Hour.

Analysis of at least one article per week and deliverance of a short oral presentation to the class concerning the article's main points as well as commenting on the quality of the paper experimental design; relies heavily from the current literature published through two main laboratory animal medical journals, Comparative Medicine (CompMed) and Journal of the American Association for Laboratory Animal Science (JAALAS).

Prerequisites: DVM and acceptance into the laboratory animal residency program; or approval of instructor.

VPAT 660 Mammalian Cell Pathobiology

Credits 3. 3 Lecture Hours.

Cell signaling and organelle perspective of pathogenesis, mechanisms leading to a disease state; fundamental understanding of structural and functional properties of mammalian cells; molecular and cellular mechanisms underlying health-disease transitions.

Prerequisites: BIOL 111 and BIOL 112, or approval of instructor.

VPAT 681 Seminar

Credit 1. 1 Lecture Hour.

For graduate and special students in veterinary or comparative pathology; presentation and discussion of special topics and research data concerning pathology and pathogenesis of disease.

Prerequisite: Approval of instructor.

VPAT 685 Directed Studies

Credits 1 to 4. 1 to 4 Other Hours.

Advanced special problems concerned with pathogenesis and pathology of disease.

Prerequisite: Approval of instructor.

VPAT 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.

Selected topics in an identified area of veterinary or comparative pathology. May be repeated for credit.

VPAT 690 Theory of Research**Credits 3. 3 Lecture Hours.**

Theory and design of research related to current biomedical problems especially those involving study of animal disease; philosophical perspectives underlying historical advances in research pertaining to the study, prevention and treatment of disease. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Graduate classification.**Cross Listing:** NRSC 690, VIBS 690 and VTPP 690.**VPAT 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

VSCS Vet Small Animal Clin. Sc

VSCS 681 Seminar**Credit 1. 1 Other Hour.**

Current scientific work in medical and surgical fields in and related to small animal medicine and surgery. May be repeated for credit.

Prerequisite: DVM degree or approval of department head.**VSCS 685 Directed Studies****Credits 1 to 8. 1 to 8 Other Hours.**

Original investigations of problems in field of small animal surgery, therapeutics or radiology.

Prerequisite: DVM degree or approval of instructor and department head.**VSCS 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 6 Lab Hours.**

Special topics in an identified area of small animal medicine or surgery. May be repeated for credit.

Prerequisite: DVM degree or approval of instructor and department head.**VSCS 691 Research****Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis.

VSCS 697 Teaching Anatomy Lab**Credits 4. 2 Lecture Hours. 12 Lab Hours.**

Theory and practical aspects of teaching neuroanatomy lab and clinical neurology; emphasis on content, instructional methods and practical aspects of neuroanatomy lab.

Prerequisites: Graduation classification in VIBS/VSCS; appointment as TA for VIBS 913 anatomy lab.**VSCS 910 Integrated Animal Care I****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Foundation in companion animal and large animal veterinary care; focus on day-one veterinary wellness and preventive care and herd-health concepts; exposure includes companion animal species, common large animal species, pocket pets, reptiles, camelids, miniature pigs and birds; clinical application of topics including neonatal care, husbandry practices, animal behavior, parasite prevention, immunization protocols and healthy animal nutrition.

Prerequisite: Enrollment in the first year of professional DVM curriculum.**VSCS 926 Professional and Clinical Skills III****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Integration and reinforcement of foundational knowledge offered in concurrent courses through critical thinking exercises, professional skills application activities (ethics/contextual decision-making, leadership, skills for well-being, personal/practice financial literacy, core communication skills) and application of technical skills; opportunities for learning include didactic, hands-on and case-based interactions utilizing simulation, models, animals, actors and case scenarios; part III of a VI part series.

Prerequisite: Enrollment in the second year of professional DVM curriculum.**VSCS 930 Principles of Anesthesia & Analgesia****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Principles of Anesthesia & Analgesia. Clinical practice of veterinary anesthesia and analgesia; equipment for administration of inhalant anesthetics, evaluation and preparation of patients for anesthesia, equipment and techniques for monitoring anesthetized patients; methods for controlling pain during the perianesthetic period; anesthetic principles for management of various species; anesthetic principles for management of patients with coexisting disease.

Prerequisites: Enrollment in the second year of professional DVM curriculum.**VSCS 932 Principles of Surgery****Credits 2. 1 Lecture Hour. 2 Lab Hours.**

Surgical management of veterinary patients; focus on basic surgical equipment, techniques, procedures and preparation of the surgeon and patient.

Prerequisites: Enrollment in the second year of professional DVM curriculum.**VSCS 934 Professional & Clinical Skills V****Credits 3. 7 Lab Hours.**

Professional & Clinical Skills V. Integration and reinforcement of foundational knowledge offered in concurrent courses through critical thinking exercises, professional skills application activities (ethics/contextual decision-making, leadership, skills for well-being, personal/practice financial literacy, core communication skills) and application of technical skills; opportunities for learning include didactic, hands-on and case-based interactions utilizing simulation, models, animals, actors and case scenarios; part V of a VI part series.

Prerequisite: Enrollment in the third year of professional DVM curriculum.**VSCS 940 Small Animal Clinics I****Credits 2. 35 Lab Hours.**

Student participation with clinical cases in the small animal medicine services of the Veterinary Teaching Hospital. Must be taken two times.

Prerequisite: Fourth year classification in veterinary medicine or approval of department head.**VSCS 941 Small Animal Clinics II****Credits 2. 35 Lab Hours.**

Student participation with clinical cases in the small animal surgery services of the Veterinary Teaching Hospital. Must be taken two times.

Prerequisite: VSCS 940 or approval of department head.**VSCS 945 Advanced Small Animal Clinical Elective****Credits 2. 35 Lab Hours.**

Student participation with clinical cases for advanced student in selected services of the small animal medicine and surgery sections of the Veterinary Teaching Hospital. May be taken 12 times.

Prerequisite: VSCS 940 or approval of department head.

VSCS 948 Small Animal Medicine and Surgery Elective**Credits 1 to 12. 1 to 12 Lecture Hours.**

In-depth study of selected disease processes in the various disciplines of small animal medicine and surgery will be conducted emphasizing management, diagnostics and medical or surgical treatment. May be repeated for credit.

Prerequisite: Third year classification in veterinary medicine or approval of department head.

VSCS 953 Small Animal Clinical Skills**Credit 1. 1 Lecture Hour.**

Acquisition of basic technical skills useful in the diagnosis and treatment of small animals in general veterinary practice. Modular one month course.

Prerequisite: Third year classification in veterinary medicine in good standing.

VSCS 954 Small Animal Medicine I**Credits 6. 5 Lecture Hours. 2 Lab Hours.**

Medical disease of dogs and cats; pathophysiology, diagnosis and therapy of diseases prevalent in small animals.

Prerequisite: Third year classification in veterinary medicine in good standing.

VSCS 955 Small Animal Medicine II**Credits 6. 6 Lecture Hours. 2 Lab Hours.**

Continuation of Small Animal Medicine I; medical disease of dogs and cats; pathophysiology, diagnosis and therapy of diseases prevalent in small animals.

VSCS 956 Small Animal Diagnostics & Therapeutics I**Credits 4.5. 4.5 Lecture Hours.**

Small Animal Diagnostics & Therapeutics I. Medical and surgical diseases in dogs and cats including pathophysiology, diagnosis and therapeutic management; understanding of self-directed continued study and appropriate use of referral; disorders of the reproductive, respiratory, hemolymphatic, dermatologic, urinary, neurologic, gastrointestinal, ophthalmic, cardiovascular, neuromuscular, orthopedic and endocrine systems; includes neoplastic, nutritional, infectious and metabolic disorders.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VSCS 957 Small Animal Diagnostics & Therapeutics II**Credits 4.5. 4.5 Lecture Hours.**

Small Animal Diagnostics & Therapeutics II. Medical and surgical diseases in dogs and cats including pathophysiology, diagnosis and therapeutic management; understanding of self-directed continued study and appropriate use of referral; disorders of the reproductive, respiratory, hemolymphatic, dermatologic, urinary, neurologic, gastrointestinal, ophthalmic, cardiovascular, neuromuscular, orthopedic and endocrine systems; includes neoplastic, nutritional, infectious and metabolic disorders.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VSCS 958 Clinical Focus-Tracking I - Companion Animal**Credits 2. 2 Lecture Hours.**

Advanced medical and surgical disorders of the dog and cat; history-taking and problem-solving skills; physical examination findings; laboratory/imaging results; formulation of diagnostic and therapeutic plans.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VSCS 960 Clinical Focus-Tracking II - Companion Animal**Credits 2. 2 Lecture Hours.**

Advanced medical and surgical disorders of the dog and cat; history-taking and problem-solving skills; physical examination findings; laboratory/imaging results; formulation of diagnostic and therapeutic plans.

Prerequisite: Enrollment in the third year of professional DVM curriculum.

VSCS 985 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of a selected problem in small animal medicine, surgery or radiology. May be repeated for credit.

Prerequisites: Matriculation in veterinary professional curriculum and approval of department head.

VTMI - Veterinary Microbiology

VTMI 604 Amazon Field School**Credits 4. 4 Lecture Hours.**

Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences and solutions to biodiversity loss through ecology, culture and governance.

Cross Listing: RPTS 654 and WFSC 654.

VTMI 610/VIBS 610 Epidemiologic Methods II and Data Analysis**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Principles and methods for the analysis of data from epidemiologic studies including the purpose of data analysis and role of statistics, sampling distributions, probability distributions, analysis of crude, stratified and matched data, and the use of linear and logistic regression methods.

Prerequisites: VIBS 608 and STAT 651 or approval of instructor.

Cross Listing: VIBS 610/VTMI 610.

VTMI 614 Fermentation and Gastrointestinal Microbiology**Credits 3. 3 Lecture Hours.**

Fermentation and gastrointestinal ecosystems in terms of microorganisms present, their activities and requirements and their interactions in a dynamic system.

Prerequisite: Beginning microbiology and/or biochemistry or approval of instructor.

Cross Listing: POSC 614 and NFSC 614.

VTMI 615 Immunogenetics and Comparative Immunology**Credits 3. 3 Lecture Hours.**

Genetic mechanisms used to diversify immune receptors; immunoglobulins, T cell receptors, major histocompatibility complex, natural killer cell receptors, toll-like receptors and many others; selected comparative and veterinary examples of different immune recognition systems; evolution of the immune system; theoretical immune surveillance and vaccine development.

Prerequisite: Graduate classification; GENE 320/BIMS 320 and VTPB 409, or equivalent, or approval of instructor.

VTMI 619 Molecular Methods for Microbial Characterization**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Underlying principles of molecular methods for microbial detection and characterization in natural and man-made ecosystems; emphasis on method application and data interpretation; emphasis on microbial pathogens and indicator organisms in foods and environment; laboratory covers select protocols.

Prerequisite: NFSC 326/ANSC 326; SCSC 405; POSC 429; approval of instructor.

Cross Listing: SCSC 619, NFSC 619 and POSC 619.

VTMI 626 Disease Detection, Surveillance and Risk Assessment**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Animal health and food safety diagnostic test evaluation, disease surveillance design and analysis and quantitative risk assessment.

Prerequisites: STAT 651 or equivalent, or approval of instructor.

VTMI 629/SCSC 629 Laboratory Quality Systems**Credits 3. 3 Lecture Hours.**

Quality systems and method development used within a laboratory; ensuring the integrity of procedures used in lab processes, chain of custody, information management, and international laboratory standards; regulatory requirements for laboratory operation; bio-security precautions; laboratory management.

Cross Listing: SCSC 629/VTMI 629.

VTMI 631 Wildlife Diseases**Credits 3. 3 Lecture Hours.**

Overview of diseases that affect populations of wild mammals, birds, amphibians and reptiles; emphasis on diseases that are transmissible to humans or domestic animals and those found in Texas.

VTMI 643 Pathogenic Bacteriology I**Credits 4. 3 Lecture Hours. 4 Lab Hours.**

Pathogenic bacteria, their cultural and biological characteristics and pathogenicity.

Prerequisite: Minimum of 8 hours of undergraduate microbiology.

VTMI 645 Host-Agent Interaction**Credits 3. 3 Lecture Hours.**

Basic concepts of infection versus disease; molecular approaches to problems in microbiology; inducible host responses, agent escape mechanisms and movement of potential pathogens in the ecosystem.

Prerequisite: GENE 431/BICH 431 or equivalent.

VTMI 647 Virology**Credits 3. 3 Lecture Hours.**

Virus infections of animals and humans; introductory material includes virus replication cycle, taxonomy and methods to study viruses.

Prerequisite: VTPB 438 or equivalent; or approval of instructor.

VTMI 649/POSC 649 Immunology**Credits 3. 3 Lecture Hours.**

Cellular basis of the immune response; relationships between inflammation and acquired immunity, MHC and cell activation; the role of cytokines in immunoregulation and hypersensitivity, vaccines, and the mechanism of immunity to viruses, bacteria and parasites.

Prerequisite: VTPB 409 or equivalent.

Cross Listing: POSC 649/VTMI 649.

VTMI 650/POSC 660 Experimental Immunology**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Familiarization, development and integration of techniques into experimental design of immunologic investigation; antibody production, protein purification, immunofluorescence, agar-gel diffusion, immunoelectrophoresis and specialized serologic tests.

Cross Listing: POSC 660/VTMI 650.

VTMI 662 Advanced Immunologic Concepts**Credits 1 to 5. 1 to 5 Lecture Hours.**

Modular course with detailed discussions, workshops and assigned reading/problem solving on advanced topics; structural organization of molecules; genetic regulation; cytokine cascades; pathophysiology of autoimmunity. May be repeated for credit.

Prerequisites: VTMI 649/POSC 649; BICH 603 or equivalent; approval of instructor.

VTMI 663/MPIM 663 Molecular Biology of Viruses**Credits 3. 3 Lecture Hours.**

In-depth studies of the biochemistry and the replication strategies of viruses and molecular mechanisms of pathogenesis for selected viral systems.

Prerequisite: Graduate classification in pathology, molecular biology, biochemistry, or approval of instructor.

Cross Listing: MPIM 663/VTMI 663.

VTMI 664 Mammalian Genome Modification for Biomedical Research**Credits 3. 3 Lecture Hours.**

Reviews the uses of genetic manipulation in biomedical research and provides a working knowledge of the various strategies used to modify mammalian genomes including transgenes, homologous recombination, gene-trapping, RNA interference, cloning, and gene therapy.

VTMI 665 Viral Vectors and Gene Therapy**Credits 3. 3 Lecture Hours.**

Describes various viral vector systems, their development and their use as research tools in biotechnology and gene therapy; consists of a mixture of short lectures and discussion of papers from the literature.

Prerequisites: VTMI 663/MPIM 663, VTMI 647, PLPA 616, or PLPA 620 or approval of instructor.

Cross Listing: MPIM 665 and PLPA 665.

VTMI 681 Seminar**Credit 1. 1 Lecture Hour.**

Review and discussion of current scientific work and research in field of microbiology and related subjects.

Prerequisite: Approval of instructor.

VTMI 685 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Problems course in microbiology.

Prerequisite: Approval of instructor.

VTMI 689 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of veterinary microbiology. May be repeated for credit.

Prerequisite: Approval of instructor.

VTMI 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Research for thesis or dissertation.

VTPB - Veterinary Pathobiology

VTPB 613 Mammalian Genomics and Bioinformatics**Credits 3. 3 Lecture Hours.**

Exploration of fundamental concepts and principles in mammalian genomics and bioinformatics; includes case studies involving applications of modern technologies and experimental practices that are foundational for historic and modern discovery.

Prerequisite: Graduate classification.

VTPB 910 Veterinary Immunology**Credits 2. 2 Lecture Hours.**

Introduction to veterinary immunology; mechanisms of resistance of infectious diseases and tumors; tissue injury caused by the immune system, including hypersensitivity reactions and autoimmunity; immunization theory and practices; immunologic methods for diagnosis of disease.

Prerequisite: Enrollment in the first year of professional curriculum.

VTPB 911 Veterinary Microbiology**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Introduction to veterinary microbiology; bacterial, viral, and mycotic agents of veterinary significance; mechanisms of host injury by pathogenic microorganisms; principles of disinfection, antisepsis, and sterilization; classes and mechanisms of mechanisms of action of antibacterial, antifungal, and antiviral drugs; diagnostic procedures and methods of sample collection.

Prerequisite: Enrollment in the first year of professional curriculum.

VTPB 913 Infectious Diseases**Credits 2. 2 Lecture Hours.**

Case-based approach to infectious diseases of animals; includes infectious diseases of major body systems; etiologic agents include viruses, bacteria, fungi, protozoa, helminths, and arthropods; differential diagnosis of infectious agents, diagnostic approaches, prevention, and treatment emphasized; management practices to control infectious diseases covered by host species.

Prerequisite: Enrollment in second year of the professional curriculum.

VTPB 920 Parasitology**Credits 5. 3 Lecture Hours. 4 Lab Hours.**

Taxonomy, biological and clinical aspects of the commonly occurring helminth, protozoan and arthropod parasites of domestic and laboratory animals. Signs, pathogenesis, diagnosis, treatment, prevention, and control, public health and economic importance of parasitic diseases.

Prerequisite: Enrollment in the second year of professional curriculum.

VTPB 922 Pathology I**Credits 3 to 6. 2 to 5 Lecture Hours. 2 Lab Hours.**

Structural and functional changes in cells, tissues and organ systems of animals; pathogenesis, mechanisms and morphologic features of diseases and their relationship to clinical signs; laboratory consists of studies of gross and microscopic pathology.

Prerequisite: Enrollment in the first year of professional DVM curriculum.

VTPB 923 Pathology II**Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Structural and functional changes in cells, tissues and organ systems of animals; pathogenesis, mechanisms and morphologic features of diseases and their relationship to clinical signs; laboratory consists of studies of gross and microscopic pathology.

Prerequisite: Enrollment in the second year of professional DVM curriculum.

VTPB 925 Agents of Disease I**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Introduction to the agents of infectious diseases: bacteria, fungi, viruses, prions, protozoa, helminths and arthropods; agents by general taxonomy and structural features as they relate to diagnosis and therapy, replication strategies, diagnostic procedures and mechanisms of disease production; infectious diseases representing each class of agents with emphasis on characteristics of infectious diseases for each body-system, establishing differential diagnoses for disease syndromes and developing a diagnostic approach.

Prerequisite: Enrollment in first year professional DVM curriculum.

VTPB 927 Clinical Laboratory Medicine-Clinical Pathology**Credits 5. 4 Lecture Hours. 2 Lab Hours.**

Laboratory testing and data interpretation to support and/or confirm disease processes, assess prognosis and assist in determining treatment options and monitoring response to treatment; validation and accuracy of laboratory tests.

Prerequisite: Enrollment in the second year of professional DVM curriculum.

VTPB 930 Agents of Disease II**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Continuation of Agents of Disease I: bacteria, fungi, viruses, prions, protozoa, helminths and arthropods; emphasis on characteristics of infectious diseases for each body system, establishing differential diagnosis for disease syndromes and developing a diagnostic approach.

Prerequisite: Enrollment in second year professional DVM curriculum.

VTPB 932 Organ Dysfunction: Recognition, Diagnostics and Supportive Care**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Recognition and diagnosing disorders of various body systems using clinical scenarios and laboratory data analysis; introduction to evaluation and implementation of basic treatment options to provide supportive care to animals given a disorder(s) of the body systems.

Prerequisite: Enrollment in the second year of professional DVM curriculum.

VTPB 940 Diagnostics**Credits 2. 35 Lab Hours.**

Student group participation on a rotating schedule in applied clinical activities in the area of diagnostic medicine including clinical pathology, necropsy, microbiology, parasitology, and serology.

Prerequisite: Enrollment in the fourth year professional curriculum.

VTPB 941 Clinical Microbiology and Parasitology I**Credits 2. 35 Lab Hours.**

Clinical rotation in microbiology and parasitology with emphasis on performance and interpretation of diagnostic procedures.

Prerequisite: Enrollment in the fourth year of professional curriculum.

VTPB 948 Didactic Elective**Credits 1 to 12. 1 to 12 Lecture Hours.**

Elective course in veterinary microbiology, pathology, genetics, immunology or parasitology for professional students who wish to supplement required curriculum. May be repeated for credit.

Prerequisite: Enrollment in the third year of professional curriculum.

VTPB 985 Directed Studies**Credits 1 to 4. 1 to 4 Other Hours.**

Problems in various subdisciplines.

Prerequisite: Approval of instructor.

VTPB 989 Special Topics in...**Credits 1 to 4. 1 to 4 Lecture Hours. 1 to 4 Lab Hours.**

Selected topics in an identified area of microbiology, pathology, genetics, immunology or parasitology. May be repeated for credit.

Prerequisite: Approval of department head.

VTPP - Vet Physiology & Pharm.

VTPP 605 Systemic Veterinary Physiology I**Credits 5. 5 Lecture Hours.**

Aspects of cellular physiology, physiology of excitable membranes, physiology of body fluids, neurophysiology, and the physiology of smooth, cardiac and skeletal muscle; provides a basic understanding of mammalian physiology essential as a framework for advanced graduate studies.

Prerequisite: Graduate classification.

VTPP 606 Systemic Veterinary Physiology II**Credits 5. 5 Lecture Hours.**

In-depth study covering cardiovascular, respiratory, renal physiology, gastrointestinal and endocrine physiology; provides a basic understanding of mammalian physiology essential as a framework for advanced graduate studies.

Prerequisite: VTPP 605.**VTPP 610 Physiology I****Credits 6. 5 Lecture Hours. 2 Lab Hours.**

Introduction to physiology: cell physiology, cell signaling, cell cycle, body fluids, translocation of materials, membrane potentials, neurophysiology, autonomic nervous system, thermoregulation, cardiovascular, and muscle physiology.

Prerequisites: Enrollment in MS/PhD program in Veterinary Physiology and Pharmacology; approval of instructor.**VTPP 612 Physiology II****Credits 6. 5 Lecture Hours. 2 Lab Hours.**

Blood and lymph, respiration, renal physiology, and acid-based balance, gastrointestinal physiology, metabolism, endocrinology, and reproduction.

Prerequisites: Enrollment in MS/PhD program in Veterinary Physiology and Pharmacology; approval of instructor.**VTPP 623 Biomedical Physiology I****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Physiological principles, review of cellular physiology, and development of an understanding of the nervous system and muscle, cardiovascular, and renal physiology; clinical applications related to organ systems.

Prerequisites: Graduate classification; BICH 410 and VIBS 305 recommended.**VTPP 624/VIBS 624 Endocrinology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Neuroendocrine control of puberty menstruation, ovulation, pregnancy, labor, lactation, female reproductive cycles, male reproductive functions, thyroid and parathyroid, adrenal and kidney, diabetes, obesity, sleep, memory, learning and aging, and their endocrine disorders; overview on biosynthesis, transport and signaling of peptide and neuropeptide hormones, steroids and prostaglandins.

Prerequisite: Graduate classification.**Cross Listing:** VIBS 624/VTPP 624.**VTPP 625 Pharmacology****Credits 3. 3 Lecture Hours.**

Introduction to pharmacokinetics and pharmacodynamics; survey of major pharmaceutical classes; uses, mechanisms of action and adverse reactions of selected agents.

Prerequisites: Graduate classification; VTPP 423 or approval of instructor.**VTPP 626 Systemic Physiology and Disease****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Investigation of functional changes during disease process and basic concepts related to the abnormal function and change in various organ systems in the face of disease; application of the knowledge of basic anatomy and physiology in understanding a loss or a change in normal structure and function of the body using common diseases and disorders centering on functional changes to etiology, clinical manifestations, diagnostic tests, treatment and complications.

Prerequisite: Graduate classification.**VTPP 627 Biomedical Physiology II****Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Continuation of VTPP 623. Fluid balance and acid-base balance; development of an understanding of respiratory, gastrointestinal, endocrine and reproductive physiology using human and other mammalian models; clinical applications related to organ systems.

Prerequisites: Graduate classification; VTPP 623.**VTPP 628 Pharmacology I****Credits 5. 4 Lecture Hours. 2 Lab Hours.**

Pharmacokinetics, pharmacodynamics, CNS pharmacology, autonomic pharmacology, antineoplastic agents, immunopharmacology, recombinant products, fluid and electrolyte therapy, diuretics, pharmacology of the integument.

Prerequisite: Approval of instructor.**VTPP 629 Pharmacology II****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Antimicrobials, endocrine pharmacology, eicosanoids, anti-inflammatory agents, respiratory pharmacology, anticoagulants and hematinics, GI pharmacology, cardiovascular pharmacology.

Prerequisite: Approval of instructor.**VTPP 630 Pharmacology/Toxicology****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Management and treatment of toxicosis, antidotal pharmacology, toxic plants, mycotoxins, chemical toxicants, metals, euthanasia.

Prerequisite: Approval of instructor.**VTPP 634 Physiology for Bioengineers I****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Cellular anatomy, cellular physiology and biochemistry; systems analysis of digestive, endocrine and musculoskeletal system function including information related to gross anatomy, histology and disease states; quantitative aspects of physiology and engineering applications to clinical medicine.

Prerequisite: Biomedical Engineering major or approval of instructor.**VTPP 635 Physiology for Bioengineers II****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

A systems analysis of nervous, cardiovascular, respiratory and urinary function including information related to gross anatomy, histology and disease states; quantitative aspects of physiology and engineering applications to clinical medicine.

Prerequisite: VTPP 634.**VTPP 638 Analysis of Genomic Signals****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Overview of current high throughput technology for data acquisition and analysis of genomic signals (e.g., mRNA or proteins); emphasis on microarray technology, methods for analyzing microarray data, and approaches to model the underlying phenomena from the systems biology perspective.

Prerequisites: BIOL 451 or GENE 320/BIMS 320/BIMS 320/GENE 320 or equivalent; STAT 651 or equivalent; or approval of instructor.**VTPP 639 Non-Coding RNAs****Credits 3. 3 Lecture Hours.**

Roles of non-coding RNAs in regulating gene expression for physiological functions, development and diseases; includes a brief history of the field, various categories and definitions of non-coding RNAs, research methodologies and animal models, and break-through advances in clinical applications.

Prerequisite: Approval of instructor.

VTPP 650 Stem Cell Biology**Credits 3. 3 Lecture Hours.**

Wide-range of topics related to stem cells and tissue engineering, including a brief history of the field, various categories and definitions of stem cells, research methodologies and animal models, as well as breakthrough advances in the area of engineered stem cells.

Prerequisite: Approval of instructor.**VTPP 651 Epigenetics & Systems Physiology****Credits 3. 3 Lecture Hours.**

Epigenetics & Systems Physiology. Journal club format focusing on epigenetic regulation of physiological systems; assignment of papers from primary literature and weekly oral presentations detailing opinions on research; emphasis on fundamental concepts in epigenetics, physiology and the molecular techniques employed to address research hypotheses, discussions of scientific ethics and fraud.

Prerequisite: Graduate classification.**VTPP 652 Fetal and Embryo Physiology****Credits 3. 3 Lecture Hours.**

Introduction to the physiologic processes driving embryonic development and pregnancy; focus on embryo implantation, establishment of the placenta, development of the fetal circulatory systems and the molecular processes governing embryo differentiation and development; special emphasis on the major organ systems affected by pediatric disease and on the actions of teratogens.

Prerequisites: Graduate classification.**VTPP 654 Molecular Endocrinology****Credits 3. 3 Lecture Hours.**

Structure-function relationships of hormones, their receptors and biologic activities.

Prerequisites: VTPP 653 or BIOL 649 and BICH 410 or equivalent or approval of instructor.**VTPP 655 Vascular Physiology****Credits 4. 4 Lecture Hours.**

Structure and function of blood vessels and vascular beds; molecular and cell biology of endothelium and vascular smooth muscle; microcirculation; capillary exchange; regulation of blood flow by local, neural and humoral signals.

Prerequisite: MPHY 901 or approval of department head.**VTPP 656 Physiology of the Heart****Credits 4. 4 Lecture Hours.**

Structure and function of the heart; molecular and cell biology of cardiac myocytes; electrophysiology of myocardium, pacemaker cells and conducting tissue; cardiac mechanics; control of cardiac performance; coronary circulation.

Prerequisite: MPHY 901 or MPHY 604 or approval of department head.**VTPP 657 Cardiovascular Physiology****Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Physiological considerations of the circulatory system including general and integrative aspects of the heart and blood vessels.

Prerequisites: Approval of instructor.**VTPP 659 Gamete and Embryo Physiology****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Physiology of gametes and preimplantation embryos in livestock and laboratory animals; oocyte growth and maturation in-vivo and in-vitro, fertilization in-vivo and in-vitro, embryo transfer, cryopreservation, nuclear transfer, chimera formation, gene transfer.

VTPP 667 Current Topics in Pharmacology**Credits 3. 3 Lecture Hours.**

Discussions of literature regarding topics of current research interest; physiochemical or physiologic effects of drugs at sites from molecular to whole body.

Prerequisite: Approval of instructor.**VTPP 673 Metabolic and Detoxication Mechanisms****Credits 3. 3 Lecture Hours.**

Fate of foreign compounds; their inhibitory and antagonistic action toward normal metabolic processes of the animal body.

Prerequisites: BICH 603; approval of instructor and department head.**VTPP 675 Industrial and Environmental Toxicology****Credits 3. 3 Lecture Hours.**

Fundamentals of toxicology and risk assessment; effects of selected classes of hazardous chemicals encountered in the workplace or environment on human health will be considered.

Prerequisite: Approval of instructor.**VTPP 676 Genetic and Molecular Toxicology****Credits 3. 3 Lecture Hours.**

Mechanisms of toxicant-induced target organ toxicity with emphasis on molecular control of mammalian and cell growth differentiation.

Prerequisite: Graduate course in cell biology and biochemistry.**VTPP 677 Fluorescence Detection: Steady State, Time Resolved and Imaging****Credits 4. 4 Lecture Hours.**

Fluorescence spectroscopy and confocal/multiphoton microscopy in research; intro of pharmacology, life science, and physical science students to fluorophores, anisotropy, ligand binding, energy transfer, cytometry, lifetime imaging, correlation spectroscopy, immunocytochemistry, and image analysis with an emphasis on instrumental/sample artifacts, fluorescence application, literature evaluation, and communication of rationales to other scientists.

Prerequisite: General chemistry and biology course.**VTPP 681 Seminar****Credit 1. 1 Lecture Hour.**

Review and discussion of current scientific work in physiology and related subjects.

Prerequisite: Approval of department head.**VTPP 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Problems in physiology, pharmacology or toxicology.

Prerequisite: Approval of instructor.**VTPP 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of veterinary physiology and pharmacology. May be repeated for credit.

Prerequisite: Approval of instructor.**VTPP 690 Theory of Research****Credits 3. 3 Lecture Hours.**

Theory and design of research related to current biomedical problems especially those involving study of animal disease; philosophical perspectives underlying historical advances in research pertaining to the study, prevention and treatment of disease. Must be taken on a satisfactory/unsatisfactory basis.

Prerequisite: Graduate classification.**Cross Listing:** NRSC 690, VIBS 690 and VPAT 690.

VTPP 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Original investigations in veterinary physiology, pharmacology or toxicology to be submitted by writing of thesis or dissertation as partial fulfillment for MS or PhD degree.

Prerequisite: Approval of department head.**VTPP 910 Physiology I****Credits 6. 5 Lecture Hours. 2 Lab Hours.**

Introduction to physiology: cell physiology, cell signaling, cell cycle, body fluids, translocation of materials, membrane potentials, neurophysiology, autonomic nervous system, thermoregulation, cardiovascular, and muscle physiology.

Prerequisite: Enrollment in first year of professional curriculum.**VTPP 912 Physiology II****Credits 5. 4 Lecture Hours. 2 Lab Hours.**

Respiration, renal physiology, acid-base physiology, reproductive physiology, molecular biology and gastrointestinal physiology.

Prerequisite: Enrollment in the first year of professional DVM curriculum.**VTPP 914 Professional & Clinical Skills I****Credits 3. 1 Lecture Hour. 6 Lab Hours.**

Professional & Clinical Skills I. Integration and reinforcement of foundational knowledge offered in concurrent courses through critical thinking exercises, professional skills application activities (ethics/contextual decision-making, leadership, skills for well-being, personal/practice financial literacy, core communication skills) and application of technical skills; opportunities for learning include didactic, hands-on and case-based interactions utilizing simulation, models, animals, actors and case scenarios; part I of a VI part series.

Prerequisite: Enrollment in the first year of professional DVM curriculum.**VTPP 924 Pharmacology****Credits 3 to 5. 3 to 4 Lecture Hours. 0 to 2 Lab Hours.**

Drug disposition, pharmacodynamics, drug regulations, critical appraisal of evidence about use of drugs, drugs that affect respiratory, reproductive, gastrointestinal, endocrine, immune, urinary, integumentary, cardiovascular, musculoskeletal, and nervous systems, and drugs for pain, anti-inflammatories, antineoplastics, antibiotics, and other anti-infectives in animals.

Prerequisite: Enrollment in the second year of professional DVM curriculum.**VTPP 925 Pharmacology/Toxicology II****Credits 3. 5 Lecture Hours. 2 Lab Hours.**

Antimicrobials, endocrine pharmacology, eicosanoids, antiinflammatory agents, respiratory pharmacology, anticoagulants and hematinics, GI pharmacology, cardiovascular pharmacology.

Prerequisite: Enrollment in the second year of professional curriculum.**VTPP 926 Pharmacology/Toxicology III****Credits 3. 2 Lecture Hours. 2 Lab Hours.**

Management and treatment of toxicoses, antidotal pharmacology, toxic plants, mycotoxins and mycotoxicoses, chemical toxicants, metals, euthanasia.

Prerequisite: Enrollment in the second year of professional curriculum.**VTPP 948 Didactic Elective in Veterinary Physiology and Pharmacology****Credits 1 to 12. 1 to 12 Lecture Hours.**

Elective course in physiology and pharmacology for professional students who wish to supplement required curriculum. May be repeated for credit.

Prerequisite: Enrollment in the fourth year of professional curriculum.**VTPP 985 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed, individual study of selected problems in physiology, pharmacology or toxicology. May be repeated for credit.

Prerequisite: Approval of instructor and department head.**VTPP 989 Special Topics In...****Credits 1 to 4. 1 to 4 Other Hours.**

Selected topics in an identified area of veterinary physiology and pharmacology. May be repeated for credit.

WFSC Wildlife & Fisheries Sci.

WFSC 602 Field Herpetology**Credit 1. 3 Lab Hours.**

Field work involving collection and preservation of herpetological specimens; natural history, ecological relations.

Prerequisites: Graduate classification.**WFSC 604 Ecological Modeling****Credits 3. 3 Lecture Hours.**

Philosophical basis, theoretical framework, and practical application of systems analysis and simulation within the context of ecology and natural resource management; emphasis placed on development, evaluation and use of simulation models by students.

Prerequisite: Approval of instructor.**WFSC 605 Community Ecology****Credits 3. 3 Lecture Hours.**

Overview and in-depth knowledge of community ecology; historical development; current issues, methodologies, and practical applications in natural resource management, biological conservation, agriculture, and human health; practice critical thinking, communication skills, and professionalism.

Prerequisite: Graduate classification.**WFSC 613 Animal Ecology****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Concepts of animal ecology which emerge at various levels or organization; the ecosystem, the community, the population and the individual; laboratories emphasis on the quantitative analysis of field data and the simulation of population dynamics.

Prerequisite: Graduate classification or approval of instructor.**WFSC 614 Down River: Biology of Gulf Coastal Fishes****Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Understanding the biological complexity of Gulf Coast river systems while gaining hands-on experience in field and museum ichthyological techniques; sampling of the Guadalupe and San Antonio rivers; participation in lectures, museum preparation and archiving specimens at the Biodiversity Research and Teaching Collections (BRTC).

Prerequisite: Graduate classification.**WFSC 618 Wildlife Study Design and Analysis****Credits 3. 3 Lecture Hours.**

Fundamental and advanced aspects of study design applicable to terrestrial animals; analysis and review of the scientific literature related to study design; and the development of study design for written and oral presentations.

Prerequisite: Graduate classification or approval of instructor.

WFSC 619 Wildlife Restoration**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Study of the fundamentals of the restoration of animal populations and the resources they require; factors that control the distribution and abundances of animals in relation to restoration; and how restoration plans for wildlife are developed.

Prerequisite: Graduate classification or approval of instructor.

WFSC 623 Aquaculture**Credits 4. 3 Lecture Hours. 3 Lab Hours.**

Principle of fish production for stock enhancement and human food. Species of fish used for production, cross-breeding and selection; feeds and feeding of fish and nutritional and environmental requirements for optimum productivity; effects of fish production on land and water uses as related to conservation.

Prerequisite: Graduate classification or approval of instructor.

WFSC 624 Dynamics of Populations**Credits 4. 3 Lecture Hours. 2 Lab Hours.**

Principles, models and methods for analysis of population dynamics; analysis of contemporary research emphasizing theory and its uses in evaluation and management of animal populations. Laboratory emphasizes mathematical, statistical and computer modeling of population phenomena.

WFSC 627 Ecological Risk Assessment**Credits 3. 3 Lecture Hours.**

Approaches used to identify, evaluate and manage ecological risks of chemicals on aquatic and terrestrial environments; emphasis on methods useful to assess effects of contaminants on ecosystems; testing techniques, site assessment and monitoring procedures, regulatory requirements and field and laboratory techniques. Only one of the following can be applied to the requirements for a degree: WFSC 627 and WFSC 639.

WFSC 628 Wetland Ecology and Pollution**Credits 3. 3 Lecture Hours.**

Wetlands as ecological systems that are prime habitats for wildlife and fish; geomorphology, hydrology, limnology, plant and animal communities, and humans use and management; wetlands as ultimate reservoirs of environmental pollutants; distribution, fate and effects of environmental pollutants on aquatic and terrestrial wildlife.

Prerequisite: Graduate classification or approval of instructor.

WFSC 630 Ecology and Society**Credits 3. 3 Lecture Hours.**

Study and compare human and natural ecosystems using diversity, interrelations, cycles, and energy as the conceptional organization; central themes of the course are sustainability, stewardship and science.

Prerequisite: Graduate classification or approval of instructor.

WFSC 633/GENE 633 Conservation Genetics**Credits 3. 3 Lecture Hours.**

Genetic concepts and techniques relevant to management and conservation of biological diversity, research and conservation strategies within a conservation genetics framework.

Prerequisite: Introductory courses in genetics and ecology or biological conservation.

Cross Listing: GENE 633/WFSC 633.

WFSC 636 Wildlife Habitat Management**Credits 3. 3 Lecture Hours.**

Designed to acquaint with major land use practices on lands that produce wildlife, how these influences wildlife production and alterations or manipulations of habitat used to achieve specific wildlife management goals.

Prerequisite: Graduate classification or approval of instructor.

WFSC 638 Techniques of Wildlife Management**Credits 3. 2 Lecture Hours. 3 Lab Hours.**

Techniques available to directly and indirectly manipulate wild animal populations to achieve balance between socioeconomic and aesthetic values.

Prerequisite: Graduate classification or approval of instructor.

WFSC 639 Wildlife Ecotoxicology**Credits 3. 3 Lecture Hours.**

Distribution, fate, and effects of environmental pollutants on wildlife behavior and reproduction. Global distribution of pollutants and effects on near and remote ecosystems. Field studies, biomarkers, stable isotope and various techniques for evaluating pollutant hazards on wildlife. Only one of the following will satisfy the requirements for a degree: WFSC 627 and WFSC 639.

Prerequisites: Courses in CHEM and BICH and graduate classification or approval of instructor.

WFSC 641 Sustainable Military Land Management**Credits 3. 3 Lecture Hours.**

Overview of the Department of Defense (DOD) lands within a temporal, geographic, and environmental context and perspective; major policies/laws impacting military land use and areas critical to mission sustainment; management strategies important to sustaining installations and ranges.

Prerequisite: Graduate classification or approval of instructor.

WFSC 642 Field Military Land Management**Credit 1. 0 Lecture Hours. 2 Lab Hours.**

Review of land management practices and challenges on military and adjacent private lands through field visits of select military installations. Field trips required. Previous or concurrent registration in WFSC 636 is strongly encouraged.

Prerequisite: Graduate classification or approval of instructor.

WFSC 644 Wildlife and Natural Resource Policy**Credits 3. 3 Lecture Hours.**

Review formation and implementation of major natural resource laws and policies that impact land uses; overview of natural resource laws/policies followed by presentations of a selected case study; current natural resource management (including forestry, air, water, wildlife, climate change and energy) programs and institutions analyzed and related to current natural resource policy challenges.

WFSC 646 Quantitative Phylogenetics**Credits 3. 2 Lecture Hours. 1 Lab Hour.**

Designed to provide the theory and tools required for inference of phylogenetic (evolutionary) relationships among biological taxa using various types of comparative data including morphological characters, biochemical and molecular characters, and DNA sequences; hands-on analysis of data using contemporary tools.

Prerequisites: ENTO 601 or approval of instructor.

Cross Listing: ENTO 606 and GENE 606.

WFSC 647/NFSC 651 Nutritional Biochemistry of Fishes**Credits 3. 3 Lecture Hours.**

Principles of nutritional biochemistry including nutrient metabolism and biochemical energetics with special emphasis on finfish and shell fish.

Prerequisite: BICH 410 or equivalent.**Cross Listing:** NFSC 651/WFSC 647.**WFSC 648/GENE 648 Molecular Evolution****Credits 3. 2 Lecture Hours. 1 Lab Hour.**

Theory and tools used in the analysis of molecular evolutionary patterns of DNA and protein sequences; format combines lecture presentations by instructor discussion of relevant scientific literature, computer exercises, preparation of research proposal or independent research project, and practice in peer-review process.

Prerequisite: Basic courses in general Genetics and Evolution.**Cross Listing:** GENE 648/WFSC 648.**WFSC 654 Amazon Field School****Credits 4. 4 Lecture Hours.**

Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences and solutions to biodiversity loss through ecology, culture and governance.

Cross Listing: RPTS 654 and VTMI 604.**WFSC 655/RPTS 655 Applied Biodiversity Science I****Credits 3. 3 Lecture Hours.**

Applied Biodiversity Science. Students will study in the areas of Conservation genetics, metapopulations, landscape ecology, and ecosystem management.

Prerequisite(s): Graduate classification.**Cross Listing:** RPTS 655/WFSC 655.**WFSC 670 Excel Biometry****Credits 3. 3 Lecture Hours.**

Rational and mathematics behind upper level biometrical methods; construct spreadsheets and analyze a common data set; topics include multiple regressions, principle components analysis, multivariate analysis of variance and others.

Prerequisites: Graduate classification; STAT 651 or equivalent.**WFSC 681 Seminar****Credit 1. 1 Lecture Hour.**

Important current developments in wildlife or fisheries fields with special reference to literature. Students may register up to but no more than two sections of this course in the same semester.

WFSC 684 Professional Internship**Credits 1 to 16. 1 to 16 Other Hours.**

On-the-job training in fields of wildlife and fisheries sciences.

Prerequisite: Graduate classification in Wildlife and Fisheries Sciences.**WFSC 685 Directed Studies****Credits 1 to 6. 1 to 6 Other Hours.**

Individual study and research on selected problem approved by instructor and graduate advisor. Credit adjusted in accordance with requirements of each individual case.

Prerequisite: Approved proposal.**WFSC 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Special topics in wildlife ecology, fisheries ecology, vertebrate systematics, evolutionary biology of vertebrates and conservation education. May be repeated for credit.

WFSC 691 Research**Credits 1 to 23. 1 to 23 Other Hours.**

Original research on selected wildlife and/or fisheries problem to be used in thesis or dissertation.

WGST - Women's & Gender Studies

WGST 603/SOCI 603 The Contemporary Family**Credits 3. 3 Lecture Hours.**

Review and criticism of theories developed for study of the family; family formation, dynamics, conflicts, power, dissolution; subcultural family forms and responses to social change.

Prerequisite: Graduate classification or approval of instructor.**Cross Listing:** SOCI 603/WGST 603.**WGST 610/SOCI 610 Reproduction, Birth, and Power****Credits 3. 3 Lecture Hours.**

An examination of topics related to reproductive practices, experiences, and ideologies and of the constructed and contested meanings surrounding womanhood, motherhood, sexuality, reproductive freedom, and eugenics.

Prerequisites: Graduate classification.**Cross Listing:** SOCI 610/WGST 610.**WGST 634/EHRD 634 Introduction to Gender and Education****Credits 3. 3 Lecture Hours.**

Major discussions and debates in the area of gender and education, with particular attention to the role that feminism and feminist theory have played and on the intersections of gender, race, class, ethnicity, and sexuality.

Prerequisite: Graduate classification.**Cross Listing:** EHRD 634/WGST 634.**WGST 639/ANTH 639 Gender, Ethnicity and Class in Archaeological Research****Credits 3. 3 Lecture Hours.**

Explores theoretical and methodological issues in engendering archaeology; ideological biases in the interpretation of roles attributed to women, men and underrepresented groups in the past; the impact of cultural transformations on underrepresented groups and gender relations; and how to formulate research questions concerning these issues.

Prerequisite: Graduate classification.**Cross Listing:** ANTH 639/WGST 639.**WGST 645 Queer Theory****Credits 3. 3 Lecture Hours.**

Examines origins of theories of gender and sexual diversity and their intersections with feminist theories; considers foundational and contemporary texts that address queer theory.

Prerequisite: Graduate classification.**WGST 649/EHRD 649 Feminist Pedagogy****Credits 3. 3 Lecture Hours.**

Explores how educational systems and institutions have regarded women historically and contemporarily; considers practical and theoretical writings on feminist pedagogy.

Prerequisite: Graduate classification.**Cross Listing:** EHRD 649/WGST 649.

WGST 650/EHRD 650 Gender and International Education**Credits 3. 3 Lecture Hours.**

Explores the intersection of formal and informal education and understandings of gender in countries beyond the United States.

Prerequisites: EHRD/WGST 634/EHRD 634 Introduction to Gender and Education.**Cross Listing:** EHRD 650/WGST 650.**WGST 652/COMM 656 Feminism and Rhetoric****Credits 3. 3 Lecture Hours.**

Historical development of the ideology, theory and rhetorical practices of U.S. feminism; criticism of significant artifacts of women orators and writers from the 19th century to contemporary times.

Cross Listing: COMM 656/WGST 652.**WGST 657 Race, Gender, Science and Technology****Credits 3. 3 Lecture Hours.**

Examination of underrepresentation of women and minorities in science and engineering through a multi-discipline dialogue among practicing women scientists, engineers and social scientists from multiple perspectives who have been examining ways social assumptions about gender and race can be constructed into scientific practice and outcomes.

Prerequisite: Graduate classification.**WGST 661/SOCI 661 Sociology of Gender****Credits 3. 3 Lecture Hours.**

Overview of the Sociology of Gender, historical development, primary concepts, contemporary issues. Theory, methods, and applications.

Prerequisite: Graduate classification.**Cross Listing:** SOCI 661/WGST 661.**WGST 680/ENGL 680 Theories of Gender****Credits 3. 3 Lecture Hours.**

Theories of gender, sexualities, feminism, embodiment, and difference with particular focus on their relationship to literary and cultural studies; emphasis on contemporary theoretical positions, discourses, and debates.

Prerequisite: Graduate classification.**Cross Listing:** ENGL 680/WGST 680.**WGST 681 Seminar in Women's and Gender Studies****Credits 3. 3 Other Hours.**

Intensive investigation on selected research areas in Women's and Gender Studies; exploration of the intersection of gender, queer and feminist scholarship in various disciplines and areas of study.

Prerequisites: Graduate classification.**WGST 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Directed individual study of selected problems in the field of women's and gender studies.

Prerequisite: Approval of instructor.**WGST 689 Special Topics in...****Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours.**

Selected topics in an identified area of women's and gender studies. May be repeated for credit.

Prerequisite: Approval of instructor.**WGST 694/FILM 694 Gender and Genre****Credits 3. 3 Lecture Hours.**

Exploration and analysis of the ways in which a single literary and/or film genre resonates with gendered perspectives and sexual subjectivity. May be taken two times for credit.

Prerequisite: Graduate classification.**Cross Listing:** FILM 694.

WMHS Water Mgmt & Hydrol. Sci.

WMHS 601/GEOG 634 Hydrology and Environment**Credits 3. 3 Lecture Hours.**

Examination of hydrologic processes affecting surface and groundwater resources; impact of climate, soils, vegetation, land-use practices and human effects on hydrologic processes; natural-scientific perspectives emphasized.

Prerequisite: Graduate classification.**Cross Listing:** GEOG 634/WMHS 601.**WMHS 602 Contemporary Issues in Water Resources****Credits 3. 3 Lecture Hours.**

Examination of contemporary issues in water resource systems including water quantity, water quality, ecosystem sustainability and water supply; focus on economic, legal, political and social considerations, and alternatives in water resource systems.

Prerequisite: Approval of instructor.**WMHS 640/GEOL 640 Geochemistry of Natural Fresh Waters****Credits 3. 3 Lecture Hours.**

Chemistry of aqueous solutions; weathering/redox reactions and controls on fresh waters; natural and anthropogenic factors affecting major, minor, and trace elements in fresh waters; evaluation of fresh water composition; application of water-quality measurements to quantitative hydrology.

Cross Listing: GEOL 640/WMHS 640.**WMHS 681 Seminar****Credit 1. 1 Other Hour.**

Presentations on important developments and current research in hydrological sciences and water management; seminars presented by faculty, graduate students, visiting scholars and water professionals. May be repeated 3 times for credit.

Prerequisite: Approval of instructor.**WMHS 684 Professional Internship****Credits 0-1. 0-1 Other Hours.**

An on-the-job supervised experience program, conducted on an individual basis in the area of the student's specialization in water management and hydrological science.

Prerequisites: Graduate classification or approval of instructor.**WMHS 685 Directed Studies****Credits 1 to 4. 1 to 4 Other Hours.**

Special topics in water not within scope of thesis research and not covered by other formal courses.

Prerequisite: Graduate classification and approval of instructor.**WMHS 689 Special topics in...****Credits 1 to 4. 1 to 4 Lecture Hours.**

Selected topics in an identified area of water management or hydrological science. May be repeated for credit.

Prerequisite: Approval of instructor.

WMHS 691 Research

Credits 1 to 23. 1 to 23 Other Hours.

Research toward thesis or dissertation.

TEXAS A&M UNIVERSITY AT GALVESTON

<http://www.tamug.edu>

Administrative Officers

Chief Operations Officer, Texas A&M University at Galveston and Vice President, Texas A&M University – Col. Michael E. Fossum, USAFR (Ret.), B.S., M.S., M.S.

Executive Associate Vice President for Academic Affairs and Chief Academic Officer (TAMUG), Associate Provost (TAMU) - Patrick Louchouart, B.S., M.S., Ph.D.

Associate Vice President for Academic Operations - Donna C. Lang, B.S., M.A., Ed.D.

Superintendent, Texas A&M Maritime Academy - RADM Michael J. Rodriguez, USMS, B.S., B.S., M.B.A.

Associate Vice President for Finance and Compliance Officer - Susan Hernandez Lee, B.B.A., M.B.A.

Associate Vice President for Administration and Auxiliary Services - Grant Shallenberger, B.B.A., M.A.

Associate Vice President for Research and Graduate Studies - Antonietta Quigg, B.S., B.S., Ph.D.

Assistant Vice President for Student Affairs - Todd Sutherland, B.S., M.A., Ph.D.

General Statement

Texas A&M University at Galveston, a branch campus of Texas A&M University, offers ocean-oriented graduate studies with a Master of Marine Resources Management (MMR) degree, Master of Science (MS) in Marine Biology, Doctor of Philosophy (PhD) in Marine Biology and Master of Maritime Administration and Logistics (MML). The Master of Marine Resources Management and Master of Maritime Administration and Logistics degrees are professional degrees offered on the Texas A&M University at Galveston campus. The Master of Science and Doctor of Philosophy degrees in Marine Biology are offered as part of the Marine Biology Interdisciplinary program through the collaboration of the Texas A&M University, Texas A&M University at Galveston, and Texas A&M University–Corpus Christi campuses. Texas A&M University at Galveston is located on the shore of Galveston Bay with close access to the Gulf of Mexico.

Graduate Admissions

A formal application is required from a person seeking admission or readmission to graduate studies. An application fee of \$65 for U.S. citizens and permanent residents or \$90 for international applicants is required to process an application for admission. Application fees are nonrefundable. The \$65 fee required of U.S. citizens or permanent residents may be waived, but only in exceptional cases, for low-income applicants. In such cases, an applicant should include with the application for admission a letter from his/her financial aid officer or other knowledgeable officer verifying the need for a waiver. Waiver of the \$90 international application fee is not available.

With the approval from the degree granting unit providing admission, admission to graduate studies normally remains valid for one year from the term of acceptance with one \$65 or \$90 (as appropriate) application fee. An extension to the one-year time limit may be granted, if requested by the applicant in writing and approved by the degree granting unit.

The normal requirement for admission to graduate studies is a scholastic record which, over at least the last two years of full-time academic study in a degree program, gives evidence of the applicant's ability to do successful graduate level work.

An applicant whose academic record is not satisfactory, or who is changing fields of study, may be required to take additional work in preparation for graduate study. Such work will normally be arranged in conference with the graduate advisor or the head of the student's major department. Before accepting a student for graduate study, a department may require that the student pass a comprehensive examination covering the basic undergraduate work in that field.

To allow time for processing, application forms should be filed at least six weeks prior to the deadline for each semester (international applicants should refer to the deadlines under that heading). Admission to graduate studies cannot be completed until all the credentials requested in the application form have been received and evaluated. Further information on deadlines and specific application requirements for each degree can be found by visiting <http://www.tamug.edu/grad>.

In addition to the records sent to the Office of Admissions and Records, a student should have in his/her possession a copy of his/her record for use in conferences with the graduate advisor or graduate faculty in his/her department. An applicant, otherwise qualified for admission to graduate studies, may not be approved in instances where the facilities and staff available in the particular field are not adequate to take care of the needs of the student.

Students interested in applying for admission to this program should visit the website www.applytexas.org to obtain an online graduate admission application for Texas A&M University at Galveston.

Students interested in receiving additional information on these programs should visit <http://www.tamug.edu/grad> or mail requests to:

Research and Graduate Studies Office
Texas A&M University at Galveston
P.O. Box 1675
Galveston, TX 77553-1675
Or email gradstudies@tamug.edu.

General Information (p. 1888)

General Information

General Information

Academic Deficiency

Any GPA below 2.0 for undergraduate students or below 3.0 for graduate students is considered academically deficient; this applies to term GPA, major GPA, and cumulative GPA. At the conclusion of each academic term, all students with a deficient GPA will be reviewed. Depending on the severity of their case, and extenuating circumstances when relevant, the student will be placed into one of the following categories:

- Probation One – Students placed on Probation One are able to fully continue within their program, but must show consistent progress towards regaining good standing. Failure to show consistent academic progress, per terms set by the academic department, could result in the student being moved to another deficiency category.
- Probation Two – Students placed on Probation Two are able to fully continue within their academic program, but must meet additional probationary terms as well as showing consistent progress towards regaining good standing. These terms include full completion of the Academic Coaching and Success program, as well as remediation as deemed appropriate by the academic department. Failure to meet the full terms of probation and/or to show consistent academic progress, per terms set by the academic department, could result in the student being moved to another deficiency category.
- Departmental Suspension – Students placed on Departmental Suspension will not be able to continue within their academic program. Any classes that student has registered for will be dropped, and they will not be able to register for additional classes until they have successfully applied and been accepted into a new major. Admission to another major is not guaranteed.
- Campus Suspension – Students placed on Campus Suspension will not be able to continue at Texas A&M University at Galveston for a minimum of one (1) full semester. During that time, the student is required to develop an action plan addressing the specific issues causing their academic difficulty. After the semester suspension concludes, the student is eligible to reapply to the campus; readmission is not guaranteed.
- University Suspension – Students placed on University Suspension will not be able to continue at Texas A&M University for a minimum of 12 months. Following the completion of the 12-month suspension, the student may apply for readmission; readmission is not guaranteed.

For additional information, contact the Seibel Learning Center at (409) 741-4343 for undergraduates and the Graduate Studies Office at (409) 740-4479 for graduate students.

Academic Calendar

Texas A&M University and Texas A&M University at Galveston Calendar

All dates are subject to change.

2019 Fall Semester

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|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| August 14 | Graduation application opens for all students planning to graduate in December 2019. |
| August 23 | Last day to register for fall semester classes. Refer to https://sbs.tamu.edu/billing-payments/due-dates for tuition and fee due dates, 5 p.m. |
| | Tuition and Fees payment due date. |
| August 26 | First day of fall semester classes. |
| September 2 | Last day for adding/dropping courses for the fall semester, 5 p.m.* |
| September 10 | Fall official census date. |
| September 27 | Last day to apply for all degrees to be awarded in December without a late fee. |
| September 30 | Undergraduate degree plan approval deadline. |
| October 14 | Mid-semester grades due, noon. |

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| November 7 - 22 | Preregistration for 2020 spring semester. |
| November 15 | Last day for all students to drop courses with no penalty (Q-drop), 5 p.m. |
| | Last day to change Kinesiology 198/199 grade type for fall 2019, 5 p.m. |
| | Last day to officially withdraw from the University, 5 p.m. |
| November 18 | Bonfire 1999 Remembrance Day. |
| November 27 | Reading day, no classes. |
| November 28-29 | Thanksgiving holiday. |
| December 2 | Redefined day, students attend their Friday classes. Does not apply to programs offered by the College of Nursing. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| December 3 | Redefined day, students attend their Thursday classes. Does not apply to programs offered by the College of Nursing. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| December 4 | Last day of fall semester classes. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| | Last day to apply for all degrees to be awarded in December. |
| December 5 | Reading day, no classes. |
| December 6, 9-11 | Fall semester final examinations for all students. |
| December 7 | Doctoral Commencement and Hooding Ceremony. |
| December 12 | Grades due for degree candidates, 6 p.m. |
| December 13 | Commencement and Commissioning. |
| | Last day for December undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| December 14 | Commencement and Commissioning. |
| December 16 | Final grades for all students due, noon. |
| December 23 - January 1 | Faculty and Staff holidays. |

*Adjusted to accommodate University event.

2020 Spring Semester

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| January 8 | Graduation application opens for all students planning to graduate in May 2020. |
| January 10 | Last day to register for spring semester classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates for tuition and fee due dates. |
| January 13 | First day of Spring semester classes. |
| January 17 | Last day for adding/dropping courses for the spring semester, 5 p.m. |
| January 20 | Martin Luther King Jr. Day. Faculty and Staff holiday. |
| January 29 | Spring official census date. |

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| February 14 | Last day to apply for degrees to be awarded in May without a late fee. |
| March 2 | Mid-semester grades due, noon. |
| March 9-13 | Spring break. |
| March 11-13 | Faculty and Staff holiday. |
| April 2-17 | Preregistration for the 2020 first term, second term, 10-week summer semester and fall semester. |
| April 10 | Reading day, no classes. |
| April 14 | Last day for all students to drop courses with no penalty (Q-drop), 5 p.m. |
| | Last day to change Kinesiology 198/199 grade type for spring 2020, 5 p.m. |
| | Last day to officially withdraw from the University, 5 p.m. |
| April 21 | Muster. Campus ceremony. |
| April 27 | Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| April 28 | Last day of spring semester classes. |
| | Redefined day, students attend their Friday classes. Does not apply to programs offered by the College of Nursing. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| | Last day to apply for all degrees to be awarded in May. |
| April 29 | Reading day, no classes. |
| April 30 - May 1, May 4-5 | Spring semester final examinations for all students. |
| May 6 | Grades for degree candidates due, 6 p.m. |
| May 7-9 | Commencement and Commissioning. |
| May 8 | Last day for May undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| May 11 | Final grades for all students due, noon. |

2020 Summer Term I

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| May 13 | Graduation application opens for all students planning to graduate in August 2020. |
| May 22 | Last day to register for first term and 10-week semester classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates for tuition and fee due dates. |
| May 25 | Memorial Day. Faculty and Staff holiday. |
| May 26 | First day of Summer I term classes. |
| May 29 | Last day for adding/dropping for the first term and the 10-week semester, 5 p.m. |
| | Official census date for first term and 10-week semester, 5 p.m. |
| June 15 | Last day for all students to drop courses with no penalty for the first term (Q-drop), 5 p.m. |
| | Last day to change Kinesiology 198/199 grade type for first term, 5 p.m. |

Last day to officially withdraw from the University for first term, 5 p.m.

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| June 26 | Last day of first term classes. |
| June 29 | First term final examinations. |
| | Last day to register for the second term classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates for tuition and fee due dates. |

2020 Summer Term II

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|------------|--------------------------------------------------------------------------------------------------|
| May 13 | Graduation application opens for all students planning to graduate in August 2020. |
| June 30 | First day of second term classes. |
| July 3 | Last day for adding/dropping courses for the second term, 5 p.m. |
| | Last day to apply for degrees to be awarded in August without a late fee, 5 p.m. |
| | Official census date for second term. |
| July 14 | Last day for all students to Q-drop or withdraw for 10-week semester, 5 p.m. |
| July 20 | Last day for all students to drop courses with no penalty (Q-drop) for the second term, 5 p.m. |
| | Last day to change Kinesiology 198/199 grade type for second term, 5 p.m. |
| | Last day to officially withdraw from the University for second term, 5 p.m. |
| August 3 | Last day of second term and 10-week semester classes. |
| | Last day to apply for all degrees to be awarded in August. |
| August 4-5 | Second term and 10-week semester final examinations for all students. |
| August 6 | Grades due for degree candidates, noon. |
| August 7 | Last day for August undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| August 7-8 | Commencement and Commissioning. |
| August 10 | Final grades for second term and 10-week semester due, noon. |
| | Grades will be available for viewing in Howdy after 5 p.m. |

2020 10-Week Summer Semester

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| May 13 | Graduation application opens for all students planning to graduate in August 2020. |
| May 22 | Last day to register for first term and 10-week semester classes, 5 p.m. Refer to https://sbs.tamu.edu/billing-payments/due-dates for tuition and fee due dates. |
| May 25 | Faculty and Staff holiday. |
| May 26 | First day of first term and 10-week semester classes. |
| May 29 | Last day for adding/dropping for the first term and the 10-week semester, 5 p.m. |
| | Official census date for first term and 10-week semester, 5 p.m. |
| June 29 | No 10-week semester classes. |

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| July 3 | Last day to apply for degrees to be awarded in August without a late fee. |
| July 14 | Last day for all students to drop courses with no penalty (Q-drop) for the 10-week semester, 5 p.m. |
| | Last day to officially withdraw from the University for 10-week semester, 5 p.m. |
| August 3 | Last day of second term and 10-week semester classes. |
| | Last day to apply for all degrees to be awarded in August. |
| August 4-5 | Second term and 10-week semester final examinations for all students. |
| August 6 | Grades due for degree candidates, noon. |
| August 7 | Last day for August undergraduate degree candidates to apply for Tuition Rebate in Howdy, 5 p.m. |
| August 7-8 | Commencement and Commissioning. |
| August 10 | Final grades for second term and 10-week semester due, noon. |

Admission

Graduate Admission to Texas A&M University at Galveston

For information or applications for graduate admission, please contact the Texas A&M University at Galveston Office of Graduate Studies at 409-740-4479 or email gradstudies@tamug.edu. For additional details visit <http://www.tamug.edu/grad>.

Tuition and Fees

Tuition and Fees for Texas A&M University at Galveston

Payment of Tuition and Fees (p. 1891)

One Time Only Fees (p. 1892)

Housing and Meal Plans (p. 1892)

Tuition and Fees: Texas Resident and Non-Texas Resident (Both undergraduate and graduate) (p. 1892)

Tuition and Fees: Texas A&M Maritime Academy Cadets (p. 1892)

Summer Cruise (p. 1892)

Other Expenses (p. 1893)

Students Dropped for Non-Payment (p. 1893)

Emergency Tuition and Fee Loans (p. 1893)

Unpaid Check (p. 1893)

Fees (p. 1893)

Other Expenses (p. 1895)

Student Fiscal Appeals (p. 1895)

Scholarships (p. 1895)

Payment of Tuition and Fees

Students must meet all financial obligations to the University by their due dates to avoid late penalties, regardless of timing of payment assistance (scholarships, loans, tuition assistance, etc). Failure to pay amounts owed may result in cancellation of the student's registration and their being barred from future enrollment and receiving official transcripts. Students who wish to pay fees in installments can select the option on the My Finances tab at their Howdy portal at <https://howdy.tamu.edu/cp/home/displaylogin>.

- Payments to Student Business Services may be in the form of cashier's check, personal check, debit card or money order payable to Texas A&M University at Galveston (or TAMUG). All checks and money orders are accepted subject to final payment. Debit cards are also accepted in person. Cash is not accepted at the Cashier's booth.
- Discover, Mastercard and American Express credit cards and E-checks are accepted for tuition and fee payments over the website at the Howdy Portal/ My Finance Tab. Convenience fees of 2.25% will be charged for online credit card transactions, with a minimum \$3 charge. Visa credit cards cannot be used for payment.

No tuition and fee statements will be mailed. Notices of amounts owed should be obtained through the Howdy Portal/ My Finance Tab at <https://howdy.tamu.edu/cp/home/displaylogin>. An email will be sent to a student's University email address (email.tamu.edu) when the tuition and fee statement is available to view online. Students must use their Howdy NetID and password to log into these two programs.

Students who plan to pay their bill in full by the due date will receive notification through their University email address that the fee statement is available to view online and when tuition is due and payable.

Students may choose to pay tuition and fees in installments. Students on the installment plan will receive notification through their University email account that the fee statement is available to view on line and when each installment payment is due and payable. In addition, students will be notified through this medium when any changes have occurred to their tuition and fee statement and if and when they have a refund available. All financial aid or loans must be accepted before being applied toward the student's account.

Late Payment Penalty

There are severe penalties for failure to pay student account balances and installments by their specified due dates. If a payment is delinquent when a semester ends, the student will be blocked and may not receive credit for academic work performed. Students will not be readmitted to the University until all past due balances, including late charges, are paid. A late fee of \$25 will be assessed for each payment not received on or before it is due. If a student is removed from the rolls of the University or is withdrawn for failure to pay amounts owed the University, a reinstatement fee of \$200 will be assessed in addition to any other late fees or penalties already incurred and must be paid before the student will be reinstated. Current due dates can be found at the Student Business Services website.

Late Registration Fees

Students who register on or after the first day of classes are assessed a late registration fee of \$100. Students who register after the official census date (12th class day for fall and spring, 4th day for summer) are assessed a late registration fee of \$200. Students who add classes after the official census date are assessed a late fee of \$50. Note: Penalties,

late registration and late add fees also apply to students who are required to re-enroll because their registrations were cancelled for nonpayment.

Registrations are subject to cancellation and/or financial penalties if sufficient payment is not received before 5:00p.m. on the semester due date.

Use of Collection agencies and Credit Bureau

If amounts become past due, the University reserves the right to report the account to the Credit Bureau. This will also initiate internal collection efforts and could cause the University to employ an outside collection agency to collect the debt. If any collection efforts must be made, the student will be required to reimburse the University for the fees of any collection agency, which may be based on a percentage at a maximum of 30% of the debt, and all costs and expenses, including reasonable attorney's fees the University incurs in such collection efforts.

Cancelling Registration

Once students have registered for classes, they must select one course of action from the following to remain in good standing with the University:

- pay all amounts due by the specified due date.
- use the online registration to drop all classes prior to the first day of classes.
- initiate the withdrawal process online in Howdy to begin the process to withdraw from the University after the first day of classes.

Following this procedure is especially important for students who have been awarded scholarships or financial aid since the aid may automatically pay tuition and fees and cause the registration to be held even though the student has decided not to attend. Failure to request cancellation of an unwanted registration may result in grades of F or I in all courses for the semester. The student will be required to reimburse the University for scholarships and other financial aid applied to his or her account and will be held responsible for paying all fees for the semester, regardless of whether he or she attended classes.

Cancellation for Nonpayment of Tuition and Fees

The University reserves the right to cancel registrations not paid by their due date, or the official census date for a semester or summer term, to comply with state laws requiring payment of tuition and fees, to free the classroom spaces for other students, and to ensure the most efficient use of university resources.

One Time Only Fees

| | |
|------------------------------------------------------|-----------|
| Housing Application (not refundable) | \$ 75.00 |
| Freshman New Student Conference Fee (not refundable) | \$ 225.00 |
| New Transfer Student Conference Fee (not refundable) | \$ 153.00 |
| General Property Deposit (refundable) | \$ 100.00 |

Housing and Meal Plans

With limited exception, all undergraduate students enrolled in more than nine credit hours are required to reside in campus housing (if available) and are required to purchase a meal plan. Information concerning a request to live off-campus can be obtained at <http://www.tamug.edu/reslife/Housing/Campus%20Housing%20Requirement.html>. Any student living off campus at the beginning of the semester who adds enough

hours to require living on campus must pay for room and board for the entire semester. Residence hall fees are included in the fee schedules at <http://www.tamug.edu/reslife/Housing/HallSpecifics.html>. In certain cases, single room housing is offered. The fee for that room is the normal rate plus 50%.

Upon admission to the University, students who will be living on campus must submit a \$75 housing application fee to reserve their spot in the residence halls. A waiver for the housing application may be submitted. To do so, the student should submit the housing application with an attached letter stating reasons for the waiver request. In order to be considered, the student must have a FAFSA submitted to TAMUG. The waiver request can be emailed to reslife@tamug.edu or mailed to TAMUG Residence Life, P.O. Box 1675, Galveston, TX, 77553-1675.

Students requesting to change meal plans during the semester will have 20 days from the first class day to make any changes and the cost of those changes will adhere to the University's refund schedule. Requests for changes to a meal plan after the 20 day period will not be permitted.

All changes must be made through the Dining Services Office at (409) 740-4508.

Meal Plan Fees:

For On Campus: <https://new.dineoncampus.com/tamug/for-on-campus>

For Off Campus: <https://new.dineoncampus.com/tamug/for-off-campus>

Tuition and Fees: Texas Resident and Non-Texas Resident (Both undergraduate and graduate)

Tuition and fees can be found at <http://tuition.tamu.edu/galveston>. The student will need to know his/her chosen tuition plan for determination of his/her tuition and fees.

Tuition and Fees: Texas A&M Maritime Academy Cadets

Cadets enrolled in MARB-LO, MARS-LO, MART or MARR-LO curricula pay a special tuition rate regardless of their state residency status (in-state or out-of-state). License Option students who are residents of the state of Texas will pay instate tuition plus \$12.50 per semester credit hour. License Option Students from states other than Texas will pay the instate variable plan plus \$12.50 per semester hour plus a Differential Tuition of \$300.00 per semester hour.

Tuition and fees can be found at <http://tuition.tamu.edu/galveston/>.

The Cadet's cohort will determine the applicable Tuition and Fees. NROTC Midshipmen, Drill and Ceremonies Cadets or International Cadets are not eligible for this special License Option tuition and must pay normal Texas Resident or Non-Resident as applicable.

Summer Cruise

Cadets may sail on the Texas A&M Maritime Academy training ship or they may sail aboard another maritime academy's training ships, all depending on capacity and timing issues. There are additional costs associated with travel to the ports of departure and arrival.

Cadets in the License Option Program must achieve the minimum sea service aboard ships required by the U.S. Coast Guard within four (4) years. In order to obtain federal financial aid, students must enroll in a

minimum of six semester credit hours during the summer term. Cadets may meet this requirement by completing two additional semester credit hours while on cruise or by completing an additional course on campus. Either of these options will result in additional tuition expenses.

The Summer Cruise expense for training aboard the General Rudder training ship or an alternate school includes tuition and fees plus a cruise fee. Additional travel expenses to and from the ports plus lodging is in addition to the cost of the cruise which is estimated to be between \$11,500 to \$12,500. The Summer Cruise meal plan expense includes state and city tax of 8.25%.

Other Expenses

This may include uniforms with an initial outlay of \$1,500, special training such as Fire Fighting School and incidentals.

Students who are dismissed or withdraw from a license-option degree plan after the semester begins will have fees adjusted to the appropriate resident or nonresident rate retroactive to the beginning of the semester.

License-option Cadets who are granted a leave of absence for the summer and who enroll in the onshore summer program at the Mitchell Campus instead of the summer training cruise will pay license-option fees as appropriate for that period.

License-option Cadets must complete all required sea service within four (4) years.

Students Dropped for Non-Payment:

Students that have not paid their tuition and fees in full by the 17th class day in the Fall and Spring semester or the 13th day in the Summer Semester will be "hard" dropped from their classes. At this point in time, students may no longer attend classes in the current term. To re-enroll, all tuition and fees must be paid in full and a \$200 reinstatement fee will be assessed.

Emergency Tuition and Fee Loans

Emergency tuition and fees loans are available to help students get through the crunch at fee payment time. Students can borrow up to the amount of their tuition and fees for a maximum term of 90 days in the Fall and Spring semester and 30 days in the Summer semester. The loan proceeds are applied directly to the student's account to cover current due charges. Students that anticipate their financial aid or some other third party payment may be delayed are encouraged to pursue an emergency tuition and fees loan so they will not get dropped from their classes or incur additional fees. Students may apply for this loan at the Howdy Portal/ My Finance Tab.

Short term loans are also available to pay optional fees, such as residence hall fees, meal plans, parking, etc. They can be repaid up to 12 months. To qualify you must be registered for 6 hours in the fall or spring semester and 3 hours in the summer term and be clear of all past due loans and blocks. To obtain short term loans, students should consult with Student Business Services, located in the Main Building Suite 104 or at 409-740-4434.

Unpaid Check

If a check or ACH payment accepted by Student Business Services, the bookstore or any other campus department is returned unpaid by the bank on which it is drawn, a penalty of \$30 will be assessed. The returned check or ACH payment and the penalty fee must be paid with cashier's check, money order or credit card online. If not redeemed, the

student may be dropped from the University. Student accounts will be blocked for future registration and transcripts. The student is eligible for reinstatement after payment of penalties, a \$50 reinstatement fee and redemption of the check or ACH payment. If Student Business Services receives three returned checks or ACH payments from one student, the University will no longer accept this payment type for the student.

Fees

Please note that not all fees listed below are relevant to all students.

Application Fee

Students who submit an application for undergraduate studies pay a \$75 fee. Students who submit an application for graduate studies pay a \$50 fee. International students pay a \$90 application fee.

Career Center Fee

This \$35 fee is required of students in the semester they register for on-campus interviews to support full-time and internship placement services. This fee is optional if the student desires to access career services through Texas A&M University in College Station.

Commercial Cruise Fee

A fee of \$1200 will be charged for all license option students sailing on a commercial cruise.

Distance Education Fee

\$46 per semester credit hour is assessed to students taking courses using distance education resources.

Field Trip Fees

A field trip fee ranging from \$15 to \$5,740 may be charged for courses that include field trips.

Graduation Fee

A non-refundable fee of \$47.50 per degree sought is assessed the semester a student applies for graduation. This must be paid within the first 15 class days of the student's final semester. Late payment of the Graduation Fee will result in a \$50 late charge.

International Student Service Fee

International students who are not sponsored are assessed a \$46 fee each semester to defray administrative support costs.

Independent Study Abroad Fee

In the event that a student is planning to Study Abroad, this fee of \$100 is to cover services provided by the TAMU Study Abroad Office.

International Student Health Insurance

International students (students who are not U.S. Citizens or Lawful Permanent Residents of the United States) enrolled at Texas A&M are required to have health insurance. International students will be automatically enrolled in and charged for the System Student Health Insurance Plan (SSHIP) unless they apply for and are granted a waiver. Individually purchased plans from vendors other than the Texas A&M University System provider will not be eligible for a waiver of automatic enrollment in the SSHIP. This is to ensure that medical treatment will be available in the event of injury or illness during enrollment at the University. This requirement includes students enrolled in extensive English language programs. Full-time English Language Institute (ELI) students should contact ELI for information. All other international

students can receive more detailed information about this requirement by visiting <http://admissions.tamu.edu/international/iss>. Specific questions may be directed to International Student Services by emailing ISS@tamu.edu.

General Property Deposit

A deposit of \$100 is required of every student to ensure the institution against losses, damages, and breakage for which the student is responsible, or to be used to offset in part amounts owed by the student to the institution. General deposits are returned to students, less any such amounts owed to the institution, within a reasonable period after the date of the student's withdrawal or graduation from the institution, not to exceed 180 days. The deposit retention period provides the University sufficient time to identify all amounts owed and to determine if the student intends to enroll in the semester or summer session immediately following the student's withdrawal or graduation or, if the student withdraws or graduates in the spring semester, in the next fall semester. If a student leaves the University without graduating or officially withdrawing, they must submit a written request to Student Business Services to receive a refund of their deposit. Deposits for students that do not graduate, withdraw or otherwise request a refund remain on file for four years. Those deposits are forfeited to the University's General Deposit Scholarship Fund, after deducting any amounts owed the University.

Health Services Fee

This fee is required of all students enrolled in Galveston-based classes at the rate of \$44.50 for each regular semester, \$44.50 for the summer training cruise, and \$22.25 per five-week summer term. This fee will finance health services provided by a local clinic in Galveston, and medical services on the summer training cruise.

Housing Application Fee

An application fee of \$75 is required as part of a completed housing application. Exact stipulations and details regarding the use and return of that deposit are listed within the contract signed with the application. A waiver for the housing application fee may be submitted. To do so, the student should submit the housing application with an attached letter stating reasons for the waiver request. In order to be considered, the student must have a FAFSA submitted to TAMUG. The waiver request can be emailed to reslife@tamug.edu or mailed to TAMUG Residence Life, P.O. Box 1675, Galveston, TX, 77553-1675.

Identification Card Maintenance Fee

All students must have an identification card. This card is used in registration procedures, collection of fees, for dining hall privileges, etc. If the card is lost or stolen, a reissuing fee will apply.

Installment Plan Fee

If a student chooses to use the installment plan for payment of tuition and fees, there is a \$15.00 nonrefundable charge for Fall and Spring Semesters. There is no charge for the installment plan in the summer semester.

Laboratory Fees

A laboratory fee ranging from \$8 to \$30 is charged for each laboratory course each semester.

MMAL(Master of Maritime Administration and Logistics) and MMRM (Master of Marine Resources Management) Program Fee

This fee is required of all graduate students enrolled in the MMAL and MMRM program and assessed at \$750.00 for instate residents and \$1500 for non-residential per semester. The MMAL and MMRM program fee will be utilized to provide program administration and departmental operating costs in order to sustain a quality graduate program, as well as to provide for innovative growth.

Mail Service Fee

Limited availability exists for students residing in non-university owned or operated housing to rent a campus mailbox. The fee is \$20 per semester and \$20 per ten week summer term. Inquiries should be directed to the Bookstore (409-740-4488). Students have mail services included as part of the University's room charge if they are residing in university owned or operated housing.

Cadet Drug Test Fee

The Cadet Drug Test Fee is \$30 per semester and is required for all License-Option Cadets.

New Student Conference Fee - Graduate

The Graduate New Student Conference fee is required of all new graduate students enrolling in the fall or spring semesters and selected summer terms at the rate of \$50 per student. This fee supports the provision of advanced materials to accepted students and the activities and food during the orientation.

New Student Conference Fee - Undergraduate

The New Student Conference fee is required of all new freshmen students at the rate of \$225. New transfer students enrolling in fall or spring semesters and selected summer terms will be charged \$153 per student. This fee supports the provision of advanced materials to accepted students, the conduct of new student conferences (including some meals) and student activities.

Parking Permit

All students parking an automobile or motorcycle on the campus pay a fee of \$200 for the academic year (Fall, Spring, Summer). By request, prorated refunds can be issued for terms not used. Parking rates are subject to change each fiscal year.

Recreational Sports Fee

This mandatory \$105 fee assessed for the fall and spring terms and \$52.50 for each 5-week summer term will provide building maintenance and programming support for recreational sports facilities.

Student Center Complex Fee

The mandatory Student Center Complex Fee is required for all students at the rate of \$100 per spring or fall semester or \$50 for the five-week summer term. This fee will be used for the operation, maintenance, programming improvement and purchase of equipment for the student center complex and for the acquisition and construction of additions to the complex.

Supplementary Fee for Courses Attempted More than Twice

A course that is repeated by a student more than twice at a public institution of higher education in Texas may not be reported for state

funding. As a result, the institution must either pass the non-funded portion to all students, or charge a supplementary fee to the student who is repeating the course. Texas A&M has chosen to assess a supplementary fee to those students repeating a course more than twice. A student attempting certain courses more than twice at Texas A&M University will be subject to a supplementary fee of \$125 per semester credit hour (\$375 for a 3 hour course) for the repeated course, in addition to tuition and required fees associated with the course. The general criteria for determining which courses are subject to the supplementary fee are:

- A course is subject to the fee if a student has completed it twice at Texas A&M University with a grade of A, B, C, D, F, F* (academic dishonesty), S (satisfactory), U (unsatisfactory), I (incomplete), Q (authorized drop after the add/drop period), F# (Freshmen Grade Exclusion) or X (no grade submitted).
- Courses identified by the University as repeatable for credit are not subject to the fee. A schedule of repeated courses can be found at admissions.tamu.edu/registrar/general/threeppeat.aspx.
- Courses dropped with no record (NR), no grade (NG) and withdrawals (W) are not counted as repeated courses.

Students will be notified at the time they register for a course that it has been taken twice at Texas A&M University and is subject to the supplementary fee.

Testing Administrative Fee

A \$50 per test fee will be used to pay for personnel to proctor credit-by-exams and TSI tests and to pay shipping costs to send tests to testing centers.

Texas A&M Maritime Academy Orientation Week Fee

The Texas A&M Maritime Academy Orientation Week (O-Week) Fee is \$43 and covers equipment and supplies needed during the Corps of Cadets O-Week. Meals for O-Week are a separate charge and will be added to the semester bill following O-Week.

University Advancement Fee

The variable University Advancement Fee is a required fee charged to all Texas A&M University students. The Advancement fee funds services such as advising, technology, library and administrative services such as ID services, utilities, access to discounted software and many services provided through Student Services.

University Authorized Tuition

This variable fee is assessed to compensate for occupancy, services, use and/or availability of all or any of the property, buildings, structures, activities, operations and other facilities of the campus.

Other Expenses

Textbooks and Supplies: The cost of textbooks and supplies will vary with the quality of items purchased and with the course of study pursued. Students can expect to pay about \$800 for each fall and spring semester. Expenses for the summer term should amount to approximately one-half of the above estimates.

License Option Cadet Expenses: License-option Cadets must purchase uniforms with initial outfitting estimated at \$1,500. Other items such as caps, belt buckles, and name tags may be required to be purchased from the TAMUG Bookstore.

Tickets to Texas A&M University home games may also be purchased at registration. Refunds are not allowed for individual games or games missed.

The University operates a bookstore which supplies textbooks, stationery, drawing instruments, toiletries and other supplies. All merchandise is sold at retail prices prevailing in the area. Major credit cards are accepted in the bookstore.

Student Fiscal Appeals

If a student finds themselves in an issue related to the application of University Student Fiscal Policy, such as excess hours, please access the information under <http://fms-galveston.tamu.edu/sbs-galveston/student-fiscal-appeal-process/> for an explanation of the Student Fiscal Appeal Process and an application for appeal.

Scholarships

For entering students, including freshman, transfer, and domestic graduate students, all scholarships are awarded based on information from the ApplyTexas application for admissions, including information collected in the Scholarship section of the application. If any awards require additional information, those students that are deemed qualified based on the ApplyTexas will be notified. The priority deadline for incoming student scholarships is December 1st. The final deadline for the Freshman Terry Scholarship is January 24th. The deadline for the Levy Fellowship is January 1st.

For continuing students, the University Scholarship Application (<http://sfaid.tamu.edu/uwideapp>) is used for awarding institutional scholarships. In order to receive a scholarship from Texas A&M University at Galveston for the upcoming school year, a student must complete the University Scholarship Application online by February 1st. Award recipients are primarily selected by a committee of faculty and staff from across the university who utilize this application and any other necessary supplemental information. In some cases, the selection is made directly by the donor of the scholarship funds

To view scholarships available, visit <http://www.tamug.edu/Scholarships>. For additional information, contact the Scholarship Office at scholarships@tamug.edu or 409-740-4414.

For additional information regarding financial assistance and other scholarships available to International Students, please contact:

Scholarships & Financial Aid
Texas A&M University
P. O. Box 30016
College Station, TX 77842-3016
(979) 845-3236
financialaid@tamug.edu
<http://financialaid.tamu.edu>

For additional information, please contact:

International Student Services Office
Bizzell Hall East
Texas A&M University
1226 TAMU
College Station, TX 77843-1226
USA
(979) 845-1824
Fax (979) 862-4633
iss@tamug.edu

<http://iss.tamu.edu>

Maritime Academy

Texas A&M Maritime Academy

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Mission and Purpose

The Texas A&M Maritime Academy (TAMMA) is a specialized, maritime education and training program within Texas A&M University at Galveston (TAMUG). TAMMA's mission is to educate and train professional U.S. Coast Guard-credentialed mariners and military officers to serve aboard vessels engaged in international and U.S. domestic trades and the sea services.

Admission Requirements for License Option Applicants

The process to apply for admission to TAMMA is the same for admission to TAMUG and applicants must be accepted into TAMUG as a condition of admission to TAMMA. However, admission to TAMUG does not guarantee admission into TAMMA. Due to program and professional requirements established in Federal law by the U.S. Coast Guard (USCG) and the Maritime Administration (MARAD), application for admission to TAMMA requires additional steps and documentation including

- Evidence of the ability to meet the most current medical and physical standards established by USCG regulations. Applicants must apply to the USCG for a medical certificate. The medical and physical evaluation process includes a vision test, hearing test, general medical exam, and demonstration of physical ability.[1] License Option (LO) Cadets must demonstrate ability to meet USCG medical and physical standards within nine (9) months of enrollment. LO Cadets must continue to meet the USCG medical and physical standards throughout enrollment in an LO program. LO Cadets who fail to demonstrate ability to meet most current USCG medical and physical standards will be transferred out of the LO programs until the individual is able to meet the most current USCG medical and physical standards.
- Evidence that the Cadet or Midshipman is not a user of dangerous drugs. According to Federal regulations,[2] TAMMA maintains a program for testing individuals for evidence of dangerous drug use. During O-Week, TAMMA will test entering freshmen and Cadets transferring into TAMMA for evidence of the use of dangerous drugs.

In addition, TAMMA conducts random tests throughout the academic year. Any Cadet who tests positive for the use of dangerous drugs or refuses to be tested will be immediately suspended from the Corps and all LO courses and activities for a period of at least one (1) calendar year, depending upon the outcome of a Return-to-Duty process prescribed and monitored by the USCG. There is no guarantee that a Cadet who is suspended will be permitted to re-enroll in a LO program.

- A criminal background check.

TAMMA staff, faculty, and the Commandant, review each application and make a recommendation for admission to the Superintendent. The final decision for admission into TAMMA rests with the Superintendent.

Prospective Cadets may download a TAMMA application through the TAMMA website.[3]

License Option Graduation Requirements

TAMMA's Cadets may receive diplomas from Texas A&M University only after 1) successfully completing the courses of study in their academic degree plans, 2) successfully completing required sea service and associated coursework during training cruises aboard training, commercial, or military ships, 3) passing a comprehensive professional examination administered by the USCG, and 4) demonstrating knowledge, understanding, and proficiency competencies required by the International Convention on Standards for Training, Certification and Watchkeeping (STCW).

The following degree plans offer a License Option:

- BS or MS Marine Biology
- BS Marine Sciences
- BS Marine Engineering Technology
- Masters of Marine Resources Management
- Masters in Maritime Administration and Logistics.
- BS Marine Transportation

All students enrolled in the Marine Transportation program are required to be in the LO program.

Cadets who select an LO degree plan must be motivated, honorable, and willing to experience the rigor and discipline of the regimental structure of the Corps of Cadets.

License Option Requirements

In addition to the degree requirements contained in the *Texas A&M at Galveston Students Rules* and the University catalog, LO Cadets must complete the requirements to achieve a Merchant Mariner Credential (MMC)[4] issued by the USCG. The requirements for the MMC are determined by International conventions, Federal law and regulations, and policies established by the USCG and the Maritime Administration (MARAD). The requirements for an MMC are subject to change according to developments at the International Maritime Organization, Congressional action, the Federal rulemaking process, and consultations between the USCG, MARAD, and the Maritime Academies.

The international convention with the most direct impact on TAMMA and the requirements for an MMC is the International Convention on Standards for Training, Certification and Watchkeeping for Seafarers (STCW Convention). The main purpose of the STCW Convention is to establish international agreement on training and education standards

to promote safety of life and property at sea and the protection of the marine environment.

The STCW Convention establishes endorsements that LO Cadets must achieve in order to graduate and serve aboard commercial vessels in international trade. "Deck Cadets" must achieve the STCW international endorsement as Officer In Charge of a Navigation Watch (OICNW). "Engine Cadets" must achieve the STCW international endorsement as Officer In Charge of an Engineering Watch (OICEW).

LO Cadets must also pass each course required for the desired STCW Convention international endorsement with at least a C AND demonstrate each of the required competencies contained in each course.

LO Cadets, regardless of age, prior experience as a mariner, or prior military service must maintain membership in the Corps and complete all of the requirements of the LO program. The minimum period of training is three (3) years or six (6) full semesters as a full-time student.

However, according to policies established by the Superintendent consistent with Federal law and policies regarding maritime academies, the Superintendent has discretion in this area and may grant an LO Cadet credit for successful completion of coursework, sea service, or the demonstration of knowledge and practical skills at another State or Federal Maritime Academy. Applicants who desire to transfer into TAMMA from other State or Federal Maritime Academies are encouraged to inquire regarding current policy and provide documentation regarding prior coursework, sea service, and conduct records from other Academies.

LO Cadets are required to attend all classes in each course required for the desired STCW Convention international endorsement. These courses are identified in the *Texas A&M University Catalog*. Unexcused absences are not permitted and shall be adjudicated by the TAMMA staff. All sea service must be achieved according to TAMMA's USCG-approved License Option programs.

Sea Service Requirements

Under Federal law all LO Cadets are required to complete 360 days of sea service. Cadets may achieve the required sea service through a combination of TAMMA-approved assignments aboard training vessels, commercial ships, military vessels, USCG-approved courses that employ simulators, watches aboard TAMMA's training vessel, and maintenance work.

LO Cadets pursuing a Merchant Mariner Credential with Endorsement as Officer in Charge of a Navigation Watch (OICNW)

LO Cadets pursuing endorsement as OICNW, must complete 300 days aboard a combination of training vessels, commercial vessels, or government vessels. Cadets assigned to approved training vessels receive 1.5 days of sea service for each 1 day assigned. Cadets assigned to commercial or government vessels receive 1 day of sea service for each 1 day assigned. All assignments must be approved by the Superintendent or his delegate.

These LO Cadets also achieve sea service credit, up to a maximum of 30 days, for watchkeeping and for performing maintenance aboard TAMMA's training vessel or at other sites approved by the Marine Transportation Department Head, and for successfully completing USCG-approved courses that feature training on simulators.

LO Cadets pursuing a Merchant Mariner Credential with Endorsement as Officer in Charge of an Engineering Watch (OICEW)

LO Cadets pursuing endorsement as OICEW, must complete at least 180 days aboard a combination of training vessels, commercial vessels, or government vessels. Cadets assigned to approved training vessels receive 1.5 days of sea service for each 1 day assigned. Cadets assigned to commercial or government vessels receive 1 day of sea service for each 1 day assigned. All assignments must be approved by the Superintendent.

These LO Cadets may also achieve sea service credit for not more than 180 days for performing work involving workshop skills. Cadets may perform this type of training on shore, subject to approval by the Head of the Marine Engineering Technology Department.

Corps of Cadets

The Corps of Cadets (Corps) focuses on leadership development and provides Cadets and Midshipmen enrolled in the Navy Reserve Officer Training Corps program (NROTC) a disciplined environment designed to prepare its members to become successful Merchant Marine or military officers.

Members of the Corps are required to attend formations, drills (including parades at College Station), stand announced and unannounced personal and room inspections, participate in physical fitness activities, and perform other duties required by the *Corps Operations Manual*.

TAMMA's Superintendent is responsible for TAMMA's administration and the operations of the Corps of Cadets. The Corps of Cadets includes

1) **License Option Cadets** (LO Cadets) who are studying and training to fulfill the professional requirements to become Merchant Marine Officers through TAMMA's USCG-approved training program. These Cadets enroll in TAMMA's License Option (LO) programs and must maintain membership in good standing in the Corps,

2) **Midshipmen** who meet the qualifications for acceptance into TAMUG's NROTC program. Midshipmen seek commissions in the U.S. Navy upon graduation. Midshipmen integrate fully into the Corps, and must complete all degree requirements as well as courses required by the Navy.

Students may join the NROTC program as National Four-Year Scholarship Winners or as non-subsidized college program applicants. Interested prospective Midshipmen may obtain information on the National Four-Year Scholarship program through any Navy recruiting office. The application deadline is January 15 of the year of admission. All NROTC scholarships cover the costs of tuition, fees, and uniforms. All scholarship-, junior-, and senior-level Midshipmen receive a monthly allowance and are pay for summer training periods.

3) **Drill and Ceremony (D&C) Cadets** who desire the structure, rigor, leadership training, and camaraderie of membership in the Corps. D&C Cadets are full members of the Corps, must purchase all required uniforms, perform drills, stand formation, and participate in personal and room inspections. They are not required to go on the summer cruise. Each D&C Cadet will receive a certificate indicating voluntarily participation and membership in the TAMUG Corps of Cadets.

Corps members are encouraged to participate in on-campus sports, clubs and educational activities and may compete for places on the Hearn

Honor Guard, the Drill Team, the Sea Aggie Band, and the Flag Color Guard.

Members of the Corps are generally required to live on campus in the state-of-the-art Texas A&M Maritime Academy Hall.

Standards of Conduct

In addition to the *Texas A&M University at Galveston Student Rules* and the *Texas A&M University Rules* the Corps operates according to rules and standards contained in the *Corps Operations Manual* and the *Cadet Instructions Manual*[5]. Among other things, these publications establish mandatory uniform regulations, standards of dress, grooming, and discipline.

The Corps' conduct and discipline system, administered by the Commandant, is a method for assessing the aptitude and motivation of each corps member for becoming a mariner or military officer.

Corps members who violate the Corps' standards of conduct receive demerits and Cadets that consistently violate the Corps' standards of conduct may be suspended or dismissed from the Corps. Cadets enrolled in any of the LO programs must maintain membership in good standing in the Corps. LO Cadets who are dismissed or suspended from the Corps but who are permitted to remain at TAMUG may not enroll in LO courses and will be removed from the Corps housing. Cadets who are not Texas residents, will be required to pay to out-of-state tuition costs retroactively to the beginning of the term.

The Corps includes a special unit called "Victor Company". Victor Company is veterans of the U.S. Armed Services or individuals who are married and/or with dependents or over the age of 25 when first enrolled in TAMMA. The Victor Company Cadet Commander reports directly to the Commandant and Victor Company members follow all Corps regulations including watches and practical training aboard TAMMA's training vessel.

Cadets in Victor Company are permitted to live off campus.

The Corps also includes International Cadets. International Cadets may pursue the LO education and training required to become Merchant Marine Officers and earn a degree from Texas A&M University. However, International Cadets are subject to U. S. immigration laws and may not take the USCG license exams. Instead, international Cadets receive a certificate of completion of their respective degree plans.

TAMMA will provide each Cadet accepted into the Corps a list of required uniform items along with procedures for purchasing uniforms. Entering Cadets should order uniforms as soon as they learn they have been accepted into the Corps. TAMMA will issue uniforms during Orientation Week prior to the start of the Fall Semester. The cost of uniforms ranges from \$1,500 to \$2,000.

Orientation Week

Prior to the beginning of the Fall semester, all freshman and transfer students entering TAMMA, NROTC, or D&C must attend Orientation Week (O-Week).

Under the guidance of the Commandant, members of the Corps of Cadets' leadership team plan and execute O-Week to introduce each new member to the Corps' routines and traditions. Cadets also learn military bearing and customs, basic seamanship, engineering, and nautical science skills. O-Week training includes, military formations, marching to class and meals, team-building exercises, hands-on seamanship training, and other training to enable new members to hit the decks running when the entire Corps returns from training cruises and assignments at sea.

Student Incentive Program (SIP)

LO Cadets may qualify for financial support through MARAD's Student Incentive Program (SIP).[6] LO Cadets who receive financial support through SIP participate in the Navy Reserve's Strategic Sealift Officer (SSO) program and receive a commission as Ensign, USNR upon graduation and may apply for active duty service with the Navy following graduation.

In order to qualify for the financial support under SIP, LO Cadets must

1. Pass a Navy physical examination and maintain Navy medical standards,
2. Pass semi-annual Navy Physical Readiness Tests,
3. Maintain a minimum GPA of 2.0 (4.0 system),
4. Be under the age of 27 by graduation.

Upon graduation, LO Cadets who accept financial support through SIP, must

1. Complete the course of instruction at TAMMA,
2. Within three (3) months of completion of the TAMMA course of study, achieve a merchant mariner license with appropriate national and international endorsements for service aboard vessels in domestic and international voyages with unlimited endorsements,
3. For at least six (6) years maintain a valid 1) merchant mariner license with appropriate national and international endorsements for service aboard vessels in domestic and international voyages with unlimited endorsements, 2) transportation worker identification credential, and 3) USCG medical certificate.
- 4). Apply for and accept, if tendered, an appointment as a commissioned officer in the Navy Reserve including the Strategic Sealift Officer Program, the USCG Reserve, or any other reserve component of the Armed Forces of the United States for at least eight (8) years.
- 5) Serve the foreign and domestic commerce and the national defense for at least three (3) years after graduation.

LO Cadets with interest in the SIP are encouraged to speak with TAMMA and NROTC staff about the details of applying and the obligations following graduation.

Additional LO Requirements

In addition to minimum requirements associated with courses within USCG-approved program of study and training for international STCW Endorsements, Cadets are required to obtain several training endorsements required by the USCG. Some of these are Basic Safety Training, Basic and Advanced Firefighting, Radar and Automated Radar Plotting Aids, Global Marine Distress System (GMDSS), and Bridge Resource Management.

LO Cadets are also required to apply for and maintain a valid Transportation Workers Identification Credential (TWIC), and a current Passport. TAMMA will assist each Cadet in obtaining the required endorsements and documents. **However, it is each Cadet's responsibility to maintain a current portfolio of all required documentation.** A complete list of these requirements and costs will be available during O-Week.

The following is an example of some additional cost items associated with the LO programs. The list is not intended to be exhaustive.

- Coast Guard Approved Fire Fighting School - \$800-\$1,500.
- TWIC - \$150.
- Merchant Mariner Credential - \$140.
- Training cruise - estimated about \$9,000-\$10,500 which does not include travel expenses to and from the Ports.

[1] See 46 CFR Subpart C – Medical Certification. The USCG’s Application for Merchant Mariner Medical Certificate may be accessed at: <http://www.tamug.edu/corps/apply.html>

[2] See 46 CFR Part 16 and 49 CFR Part 40

[3] <http://www.tamug.edu/corps/apply.html>

[4] 46 CFR §10.107(b) defines *Merchant Mariner Credential* as combining the individual merchant mariner’s document, license, and the STCW endorsement into a single mariners qualification document, certificate of identification, and certificate of service.

[5] <http://www.tamug.edu/corps/>

[6] Cadets enrolled in TAMMA’s License Option (LO) program may apply for Student Incentive Payments (SIP) provided by the Department of Transportation’s Maritime Administration. Title 46 USC 51509-51511 describes the details of the SIP. Cadets are encouraged to seek guidance from TAMMA staff regarding SIP.

Services

Services for Texas A&M University at Galveston Students

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Campus Dining

Students requesting to downgrade their meal plans during the semester will have 20 days from the first class day to make any changes and the cost of those changes will adhere to the University’s refund schedule. Downgrades can only be made if the student is not already on the minimum required plan. In order to add or upgrade a meal plan, please do so by 7 weeks from the start of the semester. All changes must be made through the Dining Services Office at (409) 740-4508.

Meal Plan Pricing:

On Campus: <https://dineoncampus.com/tamug/for-on-campus>

Off Campus: <https://dineoncampus.com/tamug/for-off-campus>

Campus Recreation

The mission of the Department of Campus Recreation is to provide safe and inclusive activities that promote a healthy and physically active lifestyle while developing social, leadership, and other life skills which will enrich the education of our students and the campus community.

The Department of Campus Recreation features six programmatic areas: Intramural Sports (<http://www.tamug.edu/recsports/intramurals>), Club Sports (<http://www.tamug.edu/recsports/clubsports>), Outdoor Program (<http://www.tamug.edu/recsports/outdoorprogram.html>), Aquatics (<http://www.tamug.edu/recsports/aquatics.html>), Fitness, & Wellness.

The Intramural Sports program offers the campus community the opportunity to compete in 16 Men’s, Women’s, and/or Co-Rec leagues or tournaments. Intramural sports are open to all currently enrolled students as well as TAMUG faculty and staff. There are no registration fees charged for participation. Instructions on how to sign-up for an intramural sport can be found within the Intramural Sports tab.

The Club Sports program provides students with the chance to focus on a particular sport or recreational activity, and in many cases compete in or pursue that activity at a higher level.

The Outdoor Program grants students, faculty, and staff the opportunity to participate in outdoor pursuits such as surfing, camping, rock climbing, stand-up paddleboarding, and kayaking.

Additionally, the Department of Campus Recreation oversees aquatic facility operations at the campus outdoor pool including open swim hours, hiring of lifeguards, and facility rentals.

The Fitness program allows students, faculty, and staff to participate in group exercise classes, personal training sessions, and fitness orientations.

The Student Wellness program creates educational opportunities for students around the 8 dimensions on the wellness wheel - Spiritual,

Physical, Intellectual, Emotional, Environmental, Social, Financial, and Occupational.

Career Services

Career Services can offer a variety of services for students in every stage of the career planning process, from your freshman year through graduation. These services include:

- Career Resource Room with work stations for employment research, resume writing and professional correspondence.
- Resume and cover letter assistance
- Interview preparation and mock interviews
- On-campus interviews and employer presentations
- Specialized workshops for employment research, job and graduate school searches.
- Job search and networking tips
- Email distribution list for job and internship postings.
- Career counseling
- Two annual career fairs, one in Fall and another in the Spring

Counseling Services

The Office of Student Counseling provides services to undergraduate and graduate students at Texas A&M University at Galveston. The Office is staffed by licensed counselors and the services rendered to students are free, voluntary, and confidential. The Office staff is dedicated to assisting students in their pursuit of personal and academic growth, to helping students gain a better understanding and appreciation of themselves, and to supporting students as they make important decisions about their lives.

What is counseling?

Counseling, most simply stated, is an interaction between a person who is struggling in some way and in need of help, and another person who is trained in helping people find solutions for their struggles. The reasons for coming are many, and the counseling strategies employed also vary from counselor to counselor. The one constant is that the counselor focuses all energies on trying to help the student. It doesn't always work, but our student evaluation forms suggest that most students who seek counseling believe that it has been helpful to them. And if you feel uncertain about whether counseling is for you, we encourage you to make an initial appointment and discuss any reservations you might have with one of our counselors. There is no obligation to continue.

Course Support

Deeper understanding, extra practice at applied theory, and intellectual skill building differentiate students who attend Course Support Sessions from those who don't. Peer Consultants guide learning in foundational courses such as Chemistry, Math, Physics as well as disciplines including Accounting, Economics, Engineering, Marine Transportation, and Statistics. Course Consultants are successful students whom made an A in the course and are endorsed by faculty; they facilitate sessions in one-on-one and small group settings guiding students through homework problems and difficult course concepts using example problems. Groups of five to seven students work together in small blocks of time throughout the week.

www.tamug.edu/tutoring (<http://www.tamug.edu/tutoring>)

Disability Services

The Counseling and Career Services office provides services to students with documented disabilities. The office offers information on disabilities, campus services, and related resources. Persons with disabilities are encouraged to apply for services early and to request a meeting to discuss their individual needs prior to registration. Accommodations provided to students are based on individual need. Information regarding disabilities can be obtained through the Counseling and Career Services, P.O. Box 1675, Galveston, TX 77553-1675, call 409-740-4736.

Diversity

Consistent with the core values of Texas A&M University the mission of the Office of Student Diversity Initiatives at Texas A&M at Galveston (TAMUG) is to provide programs and services that encourages members of our community to gain a deeper understanding, awareness, and appreciation for their own culture, as well as embracing the dignity of all cultures from our global society. Goals of diversity include creating an inclusive community of respect that positively encourages and attracts diverse populations to join and contribute to the university community as a student, faculty, and/or staff member.

Our vision is to be a model of inclusion and cultural competency that empowers holistic student development, transformational learning through inter-cultural dialogue, and collaborative networks that advocates for social justice in a diverse university community. To fulfill the vision, we offer programs and services that:

- Advocates and supports students and cultural groups in their identities.
- Collaborates with campus and community entities to ensure a positive university climate that advocates for justice, access, equity, and transformative learning for all students, with special focus on underserved students.
- Provides student support by building relationships of commitment and trust.
- Provides opportunities for students to develop as leaders by fostering a community of respect and building cross-cultural relationships.
- Provides diversity education and programs that allow dialogue and intersecting discussions regarding age, citizenship, disability/ability, education, ethnicity, gender, gender identity/expression, geographical location, language, military experience, political views, race, religion, sexual orientation, socioeconomic status, and/or thought to aid with developing students' understanding of themselves and other cultures.

It is our mission to serve ALL students, but recognize the need to be especially attentive to the needs of those identifying themselves as African American/Black, Asian/Asian American, Hispanic/Latino(a), LGBT, Native American/American Indian, Multi-Racial, and/or Student Veterans.

Financial Aid and Scholarships

The mission of Scholarships and Financial Aid is to provide students with information and financial resources to attend Texas A&M University at Galveston along with support programs that promote higher education and developmental opportunities. As a part of this commitment, we strive to provide financial solutions to students at all income levels and with varying academic, merit, and leadership qualifications.

The need-based financial assistance program is designed for students who have a demonstrated financial need, as defined by the Free Application for Federal Student Aid (FAFSA) or other applicable application, in order to assist students in paying college expenses. All financial aid is contingent upon student enrollment and making Satisfactory Academic Progress (SAP), as defined by Scholarships and Financial Aid or the specific aid program.

Financial Aid

Financial aid is available in two forms: Gift Aid and Self-help.

Gift Aid

Grants (Federal, State, Institutional, Institutional, Alternative)
Scholarships
Non-resident Tuition Waivers

Self-Help

Loans (Federal, State,
Student Employment (Work
Study, Part-time Employment, Internships, Assistantships)

Texas A&M University's packaging philosophy for need-based financial aid is to provide the greatest amount of gift aid to those students with the highest demonstrated need and to keep loan liability to a minimum. Financial aid is awarded on a first-come, first-served basis with a priority date prior to the fall semester for which the student is seeking aid published on financialaid.tamu.edu.

To apply for financial assistance, a student must submit a Free Application for Federal Student Aid (FAFSA). The FAFSA becomes available on October 1st each year for the next academic year. Students are encouraged to submit their FAFSA online at <https://fafsa.gov> as soon as possible. Students who do not meet the citizenship eligibility requirements to complete the FAFSA may be eligible to submit the Texas Application for State Financial Aid (TASFA). Only students who have been accepted for enrollment, have a FAFSA or other financial aid application on file, and have submitted all requested documentation to Scholarships & Financial Aid will be sent a financial aid offer. Award offers for incoming students beginning in the Fall semester are made early in the preceding Spring semester. Award offers for incoming students beginning in the Spring semester are made late in the preceding Fall semester. Award offers to continuing students for the upcoming academic year are made after Spring semester grades have been submitted. Summer financial assistance is offered to students with a FAFSA or TASFA on file who enroll at least half-time in summer coursework at Texas A&M.

Financial aid offers are made based on the assumption that students will enroll full-time in the fall and spring semesters. Cost of attendance and awards will be adjusted for students who are enrolled less than full-time at Texas A&M University. Students may only receive federal financial aid for eligible courses that count towards the program of study. State and Institutional Aid are not subject to the same regulatory restrictions. However, the cost of attendance for students will be reduced for courses that are not counting to the program of study, which can result in a lower amount of state and institutional aid a student could receive.

Student inquiries may be directed to:

Scholarships & Financial Aid
Texas A&M University at Galveston
P. O. Box 40005
College Station, TX 77842
(405) 740-4500 - Galveston office
(979) 845-3236 - College Station office

financialaid@tamu.edu
<http://financialaid.tamu.edu>
FAFSA School Code 003632

Please visit our website for the most current information on financial aid applications, programs, and any associated deadlines.

Grants

The Federal Pell Grant is available to undergraduate students who have not received a baccalaureate degree and who have demonstrated financial need as determined by the FAFSA. The Federal Pell Grant provides a foundation of financial assistance to which aid from other sources may be added.

The Federal Supplemental Educational Opportunity Grant (FSEOG), and the Texas Public Education Grant (TPEG) are available to students, provided the results of their financial aid application show evidence of financial need and funds are available. These funds are awarded on a first-come, first-served basis. The Towards EXcellence, Access and Success (TEXAS) grant is available to eligible Texas residents who have requisite levels of financial need according to the FAFSA and have met the remaining program criteria; it is also subject to funds availability and eligibility guidelines as defined by the Texas Higher Education Coordinating Board. Additionally, Texas A&M University provides institutional grant aid to eligible students to assist with educational expenses. Student grants are subject to fund availability and may be single-year or multi-year awards.

The Federal/Texas College Work Study Programs

Federal and state programs provide part-time employment for U.S. citizens, permanent residents and eligible non-citizens, within fund limitations, who have an established financial need and desire on-campus employment.

To qualify for the Federal/Texas College Work Study Programs, a student must have submitted a financial aid application, have financial need, be eligible to work in the United States, be enrolled at least half-time or accepted for enrollment and be making Satisfactory Academic Progress if enrolled.

All Work Study students are paid minimum wage or higher, work an average of 20 hours per week, and are not eligible for paid holidays, retirement, vacation, nor sick leave.

Loan Programs

The Federal Direct Loan Programs are available to students who have submitted a FAFSA. Students will be notified of their eligibility for the Direct Loan program(s) through a financial aid offer.

Students and parents seeking the Parent Loan for Undergraduate Students (PLUS) may obtain information from the financial aid website. This program requires the FAFSA to be on file with Scholarships & Financial Aid.

Short-term loans are available to provide assistance to students who experience temporary financial difficulties with educationally related expenses. Funding for this program is provided by The Association of Former Students, the Class of 1926 and other University resources. This program is not intended to provide long-term assistance or to replace other assistance available through Scholarships & Financial Aid. Students must be degree-seeking and enrolled at least half-time to be eligible for short-term loans.

The Emergency Tuition and Required Fees loan program is available to help students pay their tuition and required fees. The loan is applied directly to the student's tuition and fee account.

Please refer to our website for detailed information on all of the aforementioned programs and more.

Changes in Status that Impact Financial Assistance

Dropping or Q-dropping a course affects a student's enrollment status.

In turn, enrollment status may impact certain funding sources. The following describes these impacts.

- **Enrollment Status** – A student's enrollment status continues to be adjusted throughout the semester when a student drops or Q-drops a course. However, in most cases, the change in status has minimal impact, depending on timing or recent changes in laws. The impact is primarily on student loan repayment.
- **Health Insurance** – In the past, students often needed to maintain full-time enrollment to continue to be covered under their parents' health insurance policy. With the implementation of the Affordable Care Act (ACA), that is no longer required. A dependent can now be covered under their parents' insurance plan until the age of 26 regardless of their enrollment status as a student.
- **Financial Aid & Scholarships** – Timing matters on when a student drops a course. Financial aid checks enrollment status on two occasions – when a student's aid is released to their billing account and on 12th class day of a Fall or Spring semester. A student's aid amount can be adjusted if the student's enrollment status changes between the time funds are disbursed to the billing account and the 12th class day. However, after the 12th class day, enrollment status is not a factor for aid that has already disbursed and instead any changes in enrollment status will be reviewed through financial aid's satisfactory academic progress standards for subsequent semesters and will not impact current semester aid. If aid has not been disbursed prior to the 12th class day, then the enrollment status on the date the aid is disbursed is what matters. In the Summer semester, enrollment status is officially checked on the 5th class day of the Summer session(s) in which the student is enrolled.
- **Student Loan Repayment** – Students must maintain at least half-time enrollment throughout the semester for student loans to remain in an in-school deferred status. Dropping below half-time enrollment will trigger student loans to enter any applicable grace period, with repayment required after the grace period has elapsed. Changes in enrollment status from full-time to half-time have no consequence on student loans. Half-time enrollment for a graduate student is defined as 5 hours and for an undergraduate student it is defined at 6 hours.

Scholarships

Incoming Freshmen Scholarship Programs

- **Achievement Scholarships** are available to incoming freshmen who attended and graduated from targeted high schools in the State of Texas. Awards are based on academic achievement, leadership ability, and extracurricular participation. For priority consideration, students must complete and submit the ApplyTexas (<http://www.applytexas.org>) freshmen scholarship application no later than December 1 of their senior year of high school.
- **Scholarships** are available to incoming freshmen who achieve a minimum 1300 Old SAT composite score (critical reading + math, with respective scores of 600 in each), 1360 New SAT composite score (evidence-based reading and writing score of at least 660 +

math scores of at least 620), or 30 ACT composite (English + Math, with scores of at least 27). For priority consideration, students must complete and submit the ApplyTexas (<http://www.applytexas.org>) freshmen scholarship application no later than December 1 of their senior year of high school.

Continuing Student Scholarships

- The University Scholarship Application is available to students with at least one semester completed at Texas A&M. Awards range in value from \$500 to \$1,500 and are available to undergraduate, graduate, and professional students currently enrolled at Texas A&M. Some awards are limited to certain fields of study and to individuals who have attained a necessary academic classification, while others are unrestricted. Awards are made to outstanding students based on a combination of academic achievement, campus/community involvement, campus leadership roles, and, for some scholarships, financial need. Students are encouraged to complete the application beginning in October via the scholarships website (<https://scholarships.tamu.edu>). The deadline for submitting applications is February 1, prior to the academic year for which the student will be awarded.

Transfer Student Scholarships

- Aggie Transfer Student scholarships are designed to recognize outstanding students who will be transferring to Texas A&M University at Galveston. Scholarships are awarded based on a combination of academic achievement, extracurricular activities, campus involvement at their current institution, leadership, major and, in some instances, financial need. These award amounts can range from \$500 to \$1,500 and the application is available to students through the ApplyTexas (<http://www.applytexas.org>) application.

Scholarship Recipients and Non-Resident Tuition Waivers

- The Competitive Scholarship waiver, authorized under Texas Education Code 54.213a, is an optional waiver that institutions can implement. An eligible non-resident student who holds a competitive academic scholarship of a specified minimum dollar amount for the academic year or summer for which the student is enrolled may be eligible to pay the fees and charges required of Texas residents without regard to the length of time the student has resided in Texas. The student must have competed with other students, including Texas residents, for the scholarship and the scholarship must be awarded by a Texas A&M University college or departmental scholarship committee or university representative. An outside donor may be consulted for input by the college or departmental unit; however, outside donor(s) may not make the final selection of the student recipient for a scholarship.
- Effective Fall 2017, undergraduate students must be awarded and maintain competitive scholarships of at least \$4,000 per academic year in order to qualify for this waiver. All graduate students, all professional students, and current undergraduate students with existing and continuing scholarship awards, may continue to receive this waiver at the previous \$1,000 threshold.
- More information is available at <http://scholarships.tamu.edu/Non-Resident-Tuition-Waiver>

For additional information on scholarships, please visit <https://scholarships.tamu.edu/> or email scholarships@tamu.edu.

Health Services

Medical Clinic: Texas A&M University at Galveston contracts with the University of Texas Medical Branch (UTMB) Family Medicine clinic for health services for enrolled undergraduate students. Under the contract, office visits to the doctor are free of charge. Medications, inoculations, x-rays, physicals, and other services provided at the clinic may be covered under students' private insurance or at the student's expense. Hospitalization and emergency room visits are full-charge at the student's expense.

Group Insurance: Since there are numerous health needs and costs, which are not provided or paid for by Student Health Service, students are strongly encouraged to maintain medical insurance. A group plan is available to all students in the Texas A&M University System. Information about this program will be distributed during new student orientation and are available from the student counseling office. Students and parents should give careful consideration prior to dropping any current health insurance.

Emergency Medical Transport: Please note that if an ambulance or other emergency transport is called, it is the responsibility of the student to cover any cost incurred; it is not the liability of the University.

Housing

The Office of Residence Life coordinates on-campus housing in modern student residence halls. Rooms are double and single occupancy and furnished with beds, desks, chairs, wardrobes or closets, and dressers. Students are expected to furnish pillows, blankets, shower curtains, linens, and cleaning supplies.

Students not enrolled in the Texas A&M Maritime Academy (TAMMA) are required to live on campus until the first Fall semester that they turn the age of 21. Exceptions may be granted for special circumstances that are listed below.

Permission to live off-campus is typically granted if one of the following circumstances are met:

- The student is married and living with their spouse in the local Galveston area.
- The student is a single parent/guardian and their child resides with them at their local Galveston area residence.
- The student is a veteran of the U.S. Armed Forces (copy of DD-214; not active duty for training only).
- The student will live with a parent/guardian in the Galveston area. (A typed verification letter will be required)
- The student will enroll in 9 credit hours or less for the semester.
- The student has an approved medical accommodation through the Office of Disability Services.

On-campus housing is required for all Cadets enrolled in TAMMA who are under the age of 25 unless they have been granted Victor company status through the Corps of Cadets.

Any student who believes they qualify to live off campus must apply for permission to seek off-campus housing. Approximately 60 percent of the undergraduate students are housed on campus, and returning students are given priority in granting permission to live off campus. Campus residents accepting housing in the fall semester are required

to sign a Fall and Spring Semester contract and are not permitted to move off campus for the spring semester. An on-line application for campus housing, which is separate from the application for admission to the University, is available from the Office of Residence Life website at www.tamug.edu/reslife (<http://www.tamug.edu/reslife>). Rooms are assigned in accordance with the date on which the housing application and room deposit are received in Financial Management Services.

Upon admission to the University, students who will be living on campus must submit an application containing a housing agreement and one-time, non-refundable housing application fee to be eligible to receive a Residence Hall Assignment. A waiver for the \$75 non-refundable application fee may be submitted. To do so, the student should submit the housing application with an attached letter stating reasons for the waiver request. In order to be considered, the student must have a FAFSA submitted to TAMUG. The waiver request can be emailed to reslife@tamug.edu or mailed to TAMUG Residence Life, P.O. Box 1675, Galveston, TX, 77553-1675.

It is recommended that housing applications be submitted early. In the event that on-campus housing is not available, information concerning off-campus housing will be provided upon request. Since TAMMA Cadets are required to live on campus, Cadets will be able to pursue a license option only if campus housing is available for them.

Housing Costs

The cost of housing for each semester will vary based on the residence hall and room style a student resides in. Visit <http://www.tamug.edu/reslife/Housing/HallSpecifics.html> for current costs.

International Student Services

The Office of Student Diversity Initiatives serves as the liaison with the International Student Services Office at Texas A&M University in College Station. Personal counseling, financial planning, liaison with embassies and consulates, legal referrals, academic referrals, immigration matters, orientation programs, and advisement to groups, are among the services offered in collaboration with the Office of Counseling Services, Financial Aid, and International Student Services in College Station, TX.

For more information regarding International Student Services, contact the Office of Student Diversity Initiatives, P.O. Box 1675, Galveston, TX 77553-1675 or call 409-740-4582.

Learning Commons

The Learning Commons is a vital part of student academic support, success, and lifelong learning by developing strong co-curricular partnerships with faculty and tailoring a variety of programs and resources for all students. Our programs provide a modern learning experience for all students, contribute to a dynamic scholarly environment, deliver high impact learning opportunities, and foster engagement with research methods and materials. Academic support programs employ over 100 students annually in leadership, teaching, and mentoring roles; These opportunities develop professional and marketable skills through experiences as peer consultants and make them competitive for jobs after graduation. The Learning Commons additionally supports the Honors Program and Undergraduate Research Services.

www.tamug.edu/learningcommons (<http://www.tamug.edu/learningcommons>)

Library

The Jack K. Williams Library and Commons hosts student-centered services and an electronic, print, and archival collection devoted to Marine and Maritime subjects in conjunction with students' courses; a computer lab for resource discovery; equipment checkout; and individual, small group, and large group study spaces. The Library supports learning with research instruction, technology, information discovery, and reading/writing skills.

Collection Services and the Research Commons promotes student success by connecting Sea Aggies with information resources in and beyond the Jack K. Williams Library's academic work and acquires books, articles, and more from libraries around the world. In addition, The Research Commons helps students and faculty acquire information literacy and promotes inquiry and critical thinking.

The Learning Commons is a vital part of student academic support and success. The Learning Commons provides a modern learning experience for all students, contributes to a dynamic student learning community, provides high impact learning opportunities and fosters lifelong learning in students. The Learning Commons impacts student success through a variety of programs and resources including the Writing Lab, Studio, Course Tutoring and Supplemental Instruction.

The Teaching Commons, another division of The Commons, provides faculty with teaching and instruction tools to creatively engage students in learning.

In addition, the Commons supports the Honors Program and Undergraduate Research Services.

Jack K. Williams Library (<http://www.tamug.edu/library>)

Learning Commons (<http://www.tamug.edu/learningcommons>)

Parking

Vehicles parked on the Galveston campus are required to display a valid parking permit, except for those parked in designated visitor's spaces. When not purchased for the full year, the annual cost of permit is prorated. For more information or to purchase a faculty, staff or student permit, visit <http://www.tamug.edu/police/parking/>.

Registration and Academic Status

The Texas A&M University at Galveston follows the same guidelines and definitions as the College Station Campus. Registration for the fall and spring semesters is accomplished at several times. During the fall and spring semesters (in November and April), a preregistration period is held for currently enrolled and readmitted students to register for the next semester. There are periods of announced open registration for students who were unable to preregister during the scheduled preregistration period. New Student Conferences serve as an opportunity for new undergraduate students to register. Further information concerning registration may be obtained from the academic calendar published in this catalog or from the Office of the Registrar. The schedule of classes is available online.

Seibel Learning Center

The mission of the Seibel Learning Center (SLC; formerly Academic Enhancement) is to contribute to the academic success of all undergraduate students at Texas A&M University at Galveston, by providing them the information and support needed to become skillful,

self-directed learners. Its aim is to guide students through the integration of curricular, co-curricular, and personal choices into a purposeful academic journey. Vital aspects of this effort include advising students on how to navigate an ever-evolving learning environment, coaching students on effective learning behaviors, connecting students to high impact opportunities, and providing individualized solutions to ease student transitions.

Specific SLC programs include Academic Advising (for all first year students as well as General Academics majors), the Academic Coaching and Success Program, Academic Compliance and Testing oversight, FIRST Program, Galveston Gateway, Impact Scholars, and the General Academics major. For additional information, please visit tamug.edu/slc (<http://www.tamug.edu/slc>).

Student Activities

It is easy to get involved at Texas A&M University at Galveston, and there are many good reasons to get involved.

As would be expected, student life at TAMUG is often centered around the ocean. Many clubs and sports often involve water, but we have numerous active student organizations including many professional organizations that cover a wide variety of interests. The only question is which organization, or organizations, are right for you?

We follow Aggie traditions such as Yell Practice, Muster, Silver Taps, SALT Camp (Sea Aggies Learning Traditions), The Big Event and the famous Aggie Ring. Students may also get involved with the Student Government Association, the Nautilus (newspaper), or Sea Spray (literary magazine).

As you can see, there are numerous opportunities to enrich your college career by practicing the six core values of Texas A&M University: Excellence, Integrity, Leadership, Loyalty, Respect, and Selfless Service.

Student Affairs

The Division of Student Affairs, Suite 101 in the Seibel Student Services Center, is responsible for the social, moral, and intellectual development of Texas A&M University at Galveston students through their involvement in student organizations, leadership activities, recreational sports, and other co-curricular and extracurricular activities. Student Affairs also oversees Housing, Judicial Services, student diversity initiatives, counseling and career services, and the residence life programs as well as advises student organizations about program planning, university rules, risk management and the function of organizations to students throughout their college career. Furthermore, they allocate funding for eligible student organizations and aid in campus wide events such as Aggie Muster, Maritime Ball, Family Weekend, and Springfest. In addition to providing students an avenue to participate in several club activities, Student Affairs is also responsible for dispersing football tickets and ordering the highly honored Aggie Ring.

The Division of Student Affairs encourages all students to take advantage of the many opportunities available through "the other education" activity programs.

The Studio

The Studio aims to target communication and presentation needs for all students, staff, and faculty exploring visual and audio communication mediums. Services include equipment checkout, dedicated audio room, individual and group editing stations, lightboard, green screen, interview station, presentation station, lighting, audio mixing boards, and microphones. The Studio encourages discovery of visual mediums by

hosting Adobe Creative Suite software along with additional audio, video, graphic, and story boarding software. Projects are supported by Video and Speech Consultants whom assist in the creation and use of media for students and faculty and development of public speaking skills.

www.tamug.edu/hypermedia (<http://www.tamug.edu/hypermedia>)

Supplemental Instruction (SI)

Supplemental Instructors design fun and collaborative study sessions based on course topics to reinforce challenging concepts and strengthen understanding. SI support is offered for historically difficult courses usually in the first year. These are taught by successful students whom made an A in the course and are endorsed by faculty. SI Leaders partner with faculty to design active learning sessions and prepare students for exams; These sessions are taught three times weekly at diverse times for broad access to all students. Regular attendance throughout the semester helps students stay on track or get ahead, build confidence through critical thinking and problem solving, and meet other students and form study groups.

<http://www.tamug.edu/supplementalinstruction>

Undergraduate Research

Undergraduate Research Services promotes student success by providing high-impact educational experiences and challenges motivated students in all academic disciplines to pursue an enriched, intellectually-stimulating curriculum. The Undergraduate Research programs bring together outstanding students and faculty to build a community of knowledge-producers, life-long learners, nationally-recognized scholars, and world citizens. Research opportunities are open to all undergraduates and is a collaborative effort between undergraduate students, graduate students, and faculty using an inquiry-based approach to generate new knowledge.

Being involved in undergraduate research allows students to participate in a scholarly community of students with common interests, to learn more about their future professional field, and to develop a close working relationship with acclaimed faculty. Research experiences make students more competitive for scholarships, internships, jobs, international opportunities, and admission to top graduate and professional programs. Perhaps most importantly, engaging in undergraduate research allows students to experience the excitement of working collaboratively to create new knowledge, solve cutting-edge problems, work collaboratively, and communicate more effectively—life skills that are increasingly valued in our world.

Visit www.tamug.edu/undergraduateresearch (<http://www.tamug.edu/undergraduateresearch>) for more information or to apply.

Undergraduate Research Scholars

The Undergraduate Research Scholars (URS) program seeks to provide eligible undergraduates with a graduate student experience by allowing them to participate in research and communicate their findings as principal authors to the University's scholarly community.

Undergraduates who participate in the Undergraduate Research Scholars (URS) program will ultimately:

- Produce a written undergraduate thesis to be published in the Undergraduate Research Scholars Capstone Collection in the

Texas A&M OAKTrust Repository (<http://oaktrust.library.tamu.edu/handle/1969.1/3367>)

- Make a public presentation
- Gain knowledge that didn't come from a classroom
- Improve their chances for acceptance into graduate or professional schools, fellowships, and grants
- Gain a better understanding of graduate school
- Network with students and faculty

To apply for the Undergraduate Research Scholars (URS) program, students must:

- Be actively involved in an independent undergraduate research project throughout both the fall and spring semesters under the mentorship of a Texas A&M faculty member throughout
- Have completed at least 60 credit hours (junior status) of undergraduate course work
- Have at least 24 credit hours at Texas A&M University
- Have and maintain a cumulative GPA of at least 3.0
- Be expecting to graduate May 2018 or later

Aggies Commit to Excellence Scholar (ACES)

The Aggies Commit to Excellence Scholar (ACES) program will fund up to 10 undergraduates from all majors to engage in high impact learning and research experiences under the mentorship of TAMUG faculty. The purpose of ACES is to empower all students and encourage underserved student populations to engage in research, as well as offer professional and leadership skills development to foster their interest and aptitude towards pursuing a graduate degree.

ACES students will receive a stipend per semester and renewal from the Fall to Spring semester will depend on successful recommendation of the faculty sponsor and demonstration of appropriate progress. Recipients will present project results at the TAMUG Student Research Symposium and/or other profession conference. A maximum of one student application per faculty member will be considered. Selection of students will be based on meeting the eligibility criteria, the quality of the narrative, and letter of support from the Faculty Sponsor.

Louis Stokes Alliance for Minority Participation (LSAMP)

Texas A&M University System Louis Stokes Alliance for Minority Participation, funded by the National Science Foundation, is part of a national initiative to increase the number of underrepresented minority students successfully completing high quality degree programs in Science, Technology, Engineering and Mathematics (STEM) disciplines and to encourage students to matriculate into graduate programs.

Five LSAMP awardees will receive a research and personal scholarship to cover research related expenses or travel to a conference. Each student will be expected to participate a minimum of 180 research hours split between the Fall and Spring semesters to present their research results at the TAMUG Student Research Symposium and LSAMP

Symposium, and/or other professional conference. A maximum of one student application per faculty member will be considered (under exceptional circumstances such as a collaborative project or a limited number of Faculty Sponsors, more than one student per professor may be considered). Selection of students will be based on meeting the eligibility criteria, the quality of the narrative, and letters of support from the Faculty Sponsor.

Undergraduate Research Ambassador

The Undergraduate Research Ambassadors work to inspire broader engagement in undergraduate research by educating and serving the Texas A&M University at Galveston community. Ambassadors represent LAUNCH at research, recruiting, and outreach events.

To be eligible, the student must:

- Have at least one semester of faculty-mentored undergraduate research experience
- Have at least 60 credit hours (24 hours at TAMUG) and maintain a GPA of 3.0 or higher
- Possess outstanding oral communication skills and describe your undergraduate research to a general audience
- Be willing to serve as a source of information on how to get involved in research
- Provide a letter of support from a Texas A&M faculty mentor

Upon acceptance to program UGR students will be expected to:

- Participate in an all-day orientation and training
- Attend Ambassador meetings
- Participate in at least 10 hours of activities per semester
- Review, interview, and train the incoming class of Ambassadors

University Police

The University Police are responsible for the protection of persons and property of Texas A&M University, and for the enforcement of the laws of the State of Texas and the rules and regulations of Texas A&M University. University police are commissioned peace officers involved in regular foot and vehicle patrol of campus, late-night security escorts, crime prevention programs for the campus community, and criminal investigations for the recovery of property and apprehension of criminals. Officers also provide regular security checks of buildings and property on campus. All members of the campus community are requested to cooperate with University police officers.

Writing Support

Students can meet with peer writing consultants in face-to-face sessions, targeted workshops for course assignments, group visits, and through web conferencing. By making an appointment through TutorTrac in the Howdy portal, students can ask questions about research and organizing/brainstorming or request a review for revision, editing, formatting, citations, and references. The service is available during any stage of the writing life-cycle and for any written or verbal project.

Writing Consultants teach strategies & techniques to improve writing for academic growth, career success, and lifelong learning.

www.tamug.edu/writing (<http://www.tamug.edu/writing>)

Facilities

Texas A&M University at Galveston Facilities

Classrooms, laboratories and meeting spaces are housed within 24 major buildings on the Mitchell Campus on Pelican Island. The Ocean and Coastal Studies building is the largest and best-equipped marine research facility on the Gulf of Mexico. The Jack K. Williams Library and Learning Commons contains over 60,000 books, museum exhibit space, archives and special collections, group study rooms, a classroom, computer lab, collections services workspace, a media lab, writing center and tutoring spaces. The training ship provides additional classroom, meeting and training space during the school year, and an additional fleet of small boats serve as floating classrooms and research stations. Other buildings include seven residence halls, the Aggie Special Events Center (ASEC), the James McCloy Arena and the Mary Moody Northern Student Center, which includes our primary dining facility. The Texas A&M University Galveston Campus has telecommunications systems established to communicate statewide within The Texas A&M University System universities and agencies. The Galveston campus has direct access to the Texas A&M University computer network in College Station via remote job entry connect lines.

Housing applications are available from Texas A&M University Galveston Office of Residence Life website www.tamug.edu/reslife (<http://www.tamug.edu/reslife>) and must be completed online with the one-time application fee. Applications can be cancelled or withdrawn by calling the Residence Life office, 409-740-4445, or emailing reslife@tamug.edu.

Policies

Texas A&M University at Galveston Policies

University Statement for Individuals with Disabilities (p. 1907)

University Statement on Harassment and Discrimination (p. 1907)

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University Statement for Individuals with Disabilities

Texas A&M University (TAMU) is committed to maintaining an accessible campus community and providing reasonable accommodations to qualified students, faculty, staff and visitors, including making its web sites accessible and usable. TAMU does not discriminate on the basis of an individual's disability and complies with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) as amended.

Students are protected from discrimination regarding access to and participation in TAMU's programs and activities. TAMU provides academic adjustments and auxiliary aides to accommodate needs of students with disabilities, as defined under the law, who are otherwise qualified to meet the institution's academic requirements.

Students with disabilities who would like to request accommodations may contact the following:

- TAMU, Texas A&M University Health Science Center's (TAMHSC) College of Nursing, Irma Lerma Rangel College of Pharmacy College Station, College of Medicine, and School of Public Health should contact Disability Services (979) 845-1637 or disability@tamu.edu.
- TAMHSC College of Dentistry should contact the Office of Academic Affairs (214) 828-8207 to request accommodations.
- TAMU School of Law should contact the Office of Student Affairs at (817) 212-4111 to request accommodations.
- TAMHSC Irma Lerma Rangel College of Pharmacy in Kingsville should contact the Disability Resource Center at TAMU at Kingsville at (361) 593-3024 to request accommodations.
- TAMU at Galveston (TAMUG) should contact Counseling and Career Services at (409) 740-4736 or studentservices@tamug.edu.
- TAMU at Qatar (TAMUQ) should contact the campus psychologist, Dr. Steve Wilson +974-4423-0047 or stephen.wilson@qatar.tamu.edu.

Students with a disability who believe they have experienced discrimination may contact Kevin McGinnis, Chief Risk, Ethics, and Compliance Officer, at the J. K. Williams Building, Suite 302, College Station, TX 77843, civilrights@tamu.edu, or at (979) 458-0308. Students can also contact the TAMU ADA Coordinator at ADA.Coordinator@tamu.edu or (979) 845-8115, or any of the following campus contacts:

- TAMU, TAMU School of Law, and TAMHSC locations should contact the ADA Coordinator at (979) 845-8115 or ADA.Coordinator@tamu.edu.
- TAMUG should contact the ADA Coordinator at (409) 740-4503 or boyerj@tamug.edu.
- TAMUQ should contact Miguel Trevino at +974-4423-0317 or miguel.trevino@qatar.tamu.edu.

For more information about disability accommodations, see TAMU Student Rule 46, [Disability Accommodations in Academic Programs](http://student-rules.tamu.edu/rule46) (<http://student-rules.tamu.edu/rule46>) or TAMUG Student Rule 46, [Disability Accommodations in Academic Programs](http://www.tamug.edu/studentrules/Academic_Programs) (http://www.tamug.edu/studentrules/Academic_Programs) (http://www.tamug.edu/studentrules/Student_Grievance_Procedures/46_Disability_Accommodations.html).

University Statement on Harassment and Discrimination

Texas A&M University is committed to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community. The University provides equal opportunity to all employees, students, applicants for employment or admission, and the public regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or gender identity. Texas A&M University will promptly investigate and resolve all complaints of discrimination, harassment (including sexual harassment), and related retaliation in accordance with applicable federal and state laws.

The University's response to allegations of discrimination, harassment, and related retaliation will be 1) prompt and equitable; 2) intended to prevent the recurrence of any discrimination, harassment or retaliation; and 3) intended to remedy its discriminatory effects, as appropriate. A substantiated allegation of such conduct will result in disciplinary action, up to and including separation from the University. The University's sanctioning guidance for substantiated allegations of discrimination on the basis of sex, including sexual harassment, sexual violence and related retaliation, can be found here: Title IX Cumulative Sanctioning Matrix (<https://urc.tamu.edu/media/1601574/title-ix-sanctioning-matrices-august-2018.pdf>).

Students who have questions or believe they have experienced discrimination, harassment, sexual violence, and/or related retaliation are encouraged to contact Kevin McGinnis, Chief Risk, Ethics, and Compliance Officer, at the J. K. Williams Building, Suite 302, College Station, TX 77843. He may be contacted at civilrights@tamu.edu or at (979) 458-0308.

In addition, any report can be submitted to Jennifer Smith, Title IX Officer, at the Medical Sciences Library, Suite 007, College Station, TX 77843. Her telephone number is: (979) 458- 8167 and email address is civilrights@tamu.edu. Such reports will be immediately forwarded to the Chief Risk, Ethics, and Compliance Officer for investigation and resolution. The Title IX website can be found at <http://urc.tamu.edu/title-ix/>.

To report incidents, request accommodations, or inquire about discrimination based on disability, you may contact Peggy Zapalac, ADA Coordinator, at (979) 845-8115 or ADA.Coordinator@tamu.edu. The office address is 750 Agronomy Road, Suite 2101, College Station, TX 77843 or see the ADA Website at <https://urc.tamu.edu/ada>. Reported incidents will be immediately forwarded to the Chief Risk, Ethics, and Compliance Officer for investigation and resolution.

Aggie Honor Code

Integrity is a fundamental core value of Texas A&M University. Academic integrity requires a commitment by all faculty, students, and administrators to:

- Remain constantly focused on the quality of the academic programs;
- Achieve and maintain academic excellence in all courses and programs to assure the value of Texas A&M University degrees;
- Demand high academic standards from all members of the Aggie community.

All Texas A&M University students, graduate and undergraduate, part-time or full-time, in residence or in distance education, are expected to follow the guiding rule of the Aggie Honor Code:

"An Aggie does not lie, cheat, or steal or tolerate those who do."

Upon accepting admission to Texas A&M University or one of its branch campuses, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. A student will be required to state his/her commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M community from the requirements or the processes of the Honor System.

The Honor System Office is charged with promotion of the honor code and administration of academic misconduct cases. The Honor Council, comprised of students and faculty from colleges and offices across the University, will investigate all such infractions of the honor code and recommend appropriate sanctions. The website, <http://aggiehonor.tamu.edu>, defines the types of infractions and the possible consequences. Students are urged to review this information.

In addition to adherence to the Honor Code, a student (graduate students in particular) who is completing a thesis, record of study, dissertation, and publication may fall under the additional federal requirements promulgated by the Office of Research Integrity (Scientific Misconduct Regulations — 42 CFR part 50), as well as Texas A&M System Regulations and Texas A&M University Rules (Texas A&M System Regulations — Ethics in Research, Scholarship and Creative Work — 15.99.03 (<https://www.tamus.edu/legal/policy/policy-and-regulation-library>), and Texas A&M University rules and standard administrative procedures — Responsible Conduct in Research and Scholarship — 15.99.03.M1, 15.99.03. M1.01-06 (<http://rules-saps.tamu.edu/TAMURulesAndSAPs.aspx#15>)).

Contact information for each campus can be found at the following:

- Texas A&M University website - <http://aggiehonor.tamu.edu>
- Texas A&M at Galveston website - <http://www.tamug.edu/honorsystem>
- Texas A&M at Qatar website - <https://www.qatar.tamu.edu/students/academic-services/aggie-honor-system>

University Student Rules

Each student enrolled at Texas A&M University at Galveston is responsible for being fully acquainted with and complying with the Texas A&M University Student Rules. Specific rules, information and procedures may be found in publications pertaining to each particular service or department. Students are encouraged to reference the website at <http://www.tamug.edu/studentrules> for current published rules and regulations.

Fishing Rules

Texas A&M University at Galveston (TAMUG) is an institution of higher education and does not include any public fishing facilities. Due to significant safety and security concerns TAMUG only allows current students, current TAMUG employees and approved guests to fish on property owned or controlled by TAMUG. Approved guests must be accompanied by an affiliated individual, unless otherwise authorized. Fishing is only permitted on the Mitchell Campus on Pelican Island.

1. Guests of affiliated students and employees are permitted to fish as long as the TAMUG student or employee is with them. Employees and students are responsible for the conduct, compliance, safety and actions of their guests. All fishermen are expected to be courteous and respectful at all times.
2. Students and staff may have a reasonable number of guests at any one time. (Campus Police will determine what is reasonable for the situation)
3. Fishermen may only deploy one or two fishing rods at a time, per fishermen. Fishing rods may not be left unattended.
4. All children must be in the immediate care of an adult. Children 12 years old and under must wear an approved USCG flotation device while on TAMUG docks, piers, and beaches, as well as when they are in or near the water. In addition to dangerous drop-offs and currents, equipment and vehicles in the vicinity of authorized fishing areas can pose a danger to unsupervised children.
5. Fishing is not permitted from the dock at any time. Fishing is allowed on the beach, between the dock and the Pelican Island Causeway, or on the fishing pier. The area around the small boat basin is not open for fishing during normal hours of operations or if port operations require it to close temporarily. Open mainly on weekends and holidays.
6. Fishing is allowed at night but may be limited or forbidden during certain times for, training, repairs and/or cruise preparation.
7. No wade fishing is allowed in the oil spill compound, the small boat basin, the Oceanography docks or any areas marked as "No Fishing". Fishing on the Teichman Road campus is strictly limited to affiliated students and employees of TAMUG.
8. All fishermen must have a valid Texas fishing license with a salt water stamp and must present it upon request.
9. No alcoholic beverages, drugs or firearms are allowed on-campus at any time. Anyone found in possession of contraband will be subject to immediate removal and/or citation or arrest.
10. All vehicle operators on-campus must obey traffic signs and directions from University Police officers or University Officials. Vehicles operated on-campus without a valid campus parking hang-tag must be registered with University Police and display a TAMUG parking pass.
11. Vehicles may be parked in campus parking areas with authorized parking permits, obtained from the Campus Police Department. Parking on the docks, the beach area or within fire lanes or any other space which is not a clearly marked parking space, is strictly prohibited. Vehicles in violation of these rules will be cited and subject to tow at the owners expense. Failure to pay parking citations (University cashiers office-SAGC) will result in revocation of fishing authorization for one year from date of violation.
12. No littering. All fishermen are responsible for any trash or debris that they may accumulate while on TAMUG property. Fish cleaning is not allowed at any time on campus property.
13. All rules will be enforced by the Campus Police Department. Anyone who fails to follow the instructions of a Campus Police Officer will be subject to revocation of campus fishing authorization, and/or citation or arrest. All unauthorized individuals will be asked to leave. All fishermen shall be considered "notified" of the rules from posted signs.
14. Texas parks and Wildlife agents frequently check fisherman on campus and notify campus officers if University rules are violated.
15. We reserve the right to investigate all containers left tied to any structure on the TAMUG water front. (anyone that suspects a

container may present a problem should immediately call the officer on duty for inspection-409-740-4545) We recommend that all who leave a container in the water make sure it has their name and phone number on it, for verification. Homeland Security rules prohibit containers of any kind to be left near the ship or between the dock and the ship. These containers will be removed and discarded without notification. No ropes, strings or lines of any kind will be fastened to water lines, gas lines, electrical conduit or any other piece of infrastructure on the water front. They will be removed and discarded without notification. Any authorized staff or researcher, who finds any unauthorized containers or fastening in the normal course of their duties may remove and discard such objects without notice. (report to Campus Police at time of removal)

16. The fishing pier, located in the sw corner of campus, is small and can only accommodate a small number of fishermen at any one time. Campus Police may relieve any overload situation by whatever reasonable means are available at the time. Safety is number one.
17. No exception to these rules may be made without the approval of the TAMUG CEO or Executive Vice President or their designee.

Title IX – Sexual Discrimination, Sexual Harassment, Sexual Assault & Violence

"No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance..."

(20 U.S.C. Section 1681)

Notice of Nondiscrimination and Abuse

Texas A&M University at Galveston provides equal opportunity to all employees, students, applicants for employment or admission, and the public regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or gender identity. Texas A&M University at Galveston will promptly investigate all complaints of illegal discrimination, sexual harassment, and related retaliation in accordance with applicable federal and state laws.

Reporting Responsibilities

Any employee who experiences, observes, or becomes aware of illegal discrimination, sexual harassment, and/or related retaliation must promptly report the incident(s). A student and third party should also promptly report the incident(s).

Only certain employees may keep reports of violations confidential: licensed health care personnel and licensed counselors when acting in this capacity as part of their official employment. All other employees informed of possible illegal discrimination, sexual harassment, and related retaliation should advise the reporter that they cannot keep the information confidential and are required to report it. The employees should inform the reporter where confidential guidance can be obtained.

Confidential Reporting Option

For confidential reporting, a student can contact a licensed counselor in the Office of Student Counseling by visiting the Seibel Student Services Center (Building #3030), Suite #104; calling (409) 740-4736; or contacting one of the individuals listed below directly. A staff or faculty member can contact a licensed counselor in the Employee Assistance Program at (409) 772-2485. To the extent possible, the university will protect the privacy of parties to the report within the context of the university's

duty to provide a safe and nondiscriminatory work and educational environment.

Mr. Ken Bailey, MA, Director of Counseling and Career Services, (409) 740-4725, baileyk@tamug.edu

Ms. Daisey McCloud, Assistant Director of Counseling and Career Services, (409) 740-4537, mccloud@tamug.edu

Where to Report an Incident

Students, faculty, staff, third parties, and applicants for employment or admission should report incidents to the appropriate Designated Official below who handles alleged violations committed by students, faculty, staff, and third parties.

- If the alleged offender is a **Student**, the official contact is
 - Dr. Todd Sutherland
Assistant VP of Student Affairs
Texas A&M University at Galveston
Seibel Student Services Center #101G
Galveston, TX 77553
TitleIXStudents@tamug.edu
(409) 740-4598
- If the alleged offender is a **Faculty Employee**, the official contact is
 - Dr. Blanca Lupiani
Executive Associate Dean of Faculties
Texas A&M University
108 YMCA Building
College Station, TX 77843
Dof@tamug.edu
(979) 845-4274
- If the alleged offender is **Staff or a Third Party**, the official contact is
 - Mr. Jeff Boyer
Executive Director of HR & Title IX Campus Coordinator
Texas A&M University at Galveston
Powell Marine Engineering Complex #123
Galveston, TX 77553
TitleIXCoordinator@tamug.edu
(409) 740-4503

For reporting incidents or making inquiries regarding discrimination based on sex, you may contact

- Texas A&M University (Main Campus) Title IX Coordinator:
 - (979) 845-0977 or TitleIX.Coordinator@tamug.edu
 - Office Address: 750 Agronomy Road, Suite 2101, College Station, TX 77843
 - See the TAMU Title IX Website <http://urc.tamu.edu/title-ix/>.
- **Jeff Boyer: Texas A&M University at Galveston Title IX Campus Coordinator**
 - (409) 740-4503 or TitleIXCoordinator@tamug.edu
 - Office Address: 200 Seawolf Parkway, Powell Marine Engineering Complex (Building #3027) Suite 123, Galveston, TX 77554.
 - See TAMUG Title IX website <http://www.tamug.edu/hrd/Title%20IX.html>

The Section 504 and ADA Coordinator:

For reporting incidents or making inquiries regarding discrimination based on sex, you also may contact

- Jeff Boyer, TAMUG Title ADA Coordinator at
 - (409) 740-4503 or at Boyerj@tamug.edu (boyerj@tamug.edu)
 - Office Address 200 Seawolf Parkway, Powell Marine Engineering Complex (Building #3027) Suite 123, Galveston, TX 77554.
- *Supervisors:*

Employees may also report incidents to their supervisor.

- *Federal Agencies:*

Inquiries or complaints about discrimination also may be directed to the U.S. Equal Employment Opportunity Commission at 1-800-669-4000 or to the U.S. Department of Education Office for Civil Rights at (214) 661-9600.

- *Texas A&M System Hotline (anonymous reporting option available):*

The Risk, Fraud & Misconduct Hotline at (888) 501-3850 or <https://secure.ethicspoint.com/domain/media/en/gui/19681/index.html>

- *Texas A&M University Galveston CARE Team (anonymous reporting option available):*

"Tell somebody" online reporting at http://www.tamug.edu/care/Tell_Somebody.html

Sexual Harassment

Sexual harassment is a form of sex discrimination. Unwelcome sexual advances, requests for sexual favors and other verbal, nonverbal or physical conduct of a sexual nature constitute sexual harassment when this conduct is so severe, persistent or pervasive that it explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work or educational performance, or creates an intimidating or hostile work or educational environment. Sexual harassment includes sexual violence, sexual assault, non-consensual sexual contact, sexual exploitation, and sex-based dating violence, domestic violence, and stalking.

Reporting Abuse or Neglect

State law requires all persons having cause to believe that a child's physical or mental health or welfare has been adversely affected by abuse or neglect to *immediately* make a report (even if the belief is premised upon incomplete or dated information) to: any local or state law enforcement agency; the Department of Family and Protective Services (DFPS); the state agency that operates, licenses, certifies, or registers the facility in which the alleged abuse or neglect occurred; or the agency designated by the court to be responsible for the protection of children. Further, all persons having cause to believe that an individual 65 years or older or a disabled person 18 years of age or older is in the state of abuse, neglect, or exploitation are required to notify the DFPS.

- *To report abuse or neglect to DFPS contact:*

The Texas Abuse Hotline at 1-800-252-5400 or http://www.dfps.state.tx.us/Contact_Us/report_abuse.asp

- *For Emergencies:*

Call 9-1-1 or local law enforcement

Texas A&M University at Galveston Police Department (409) 740-4545
Galveston Police Department (409) 765-3702
Galveston County Sheriff's Office (409) 766-2300

For additional information concerning federal and state policies, please reference the appendices (<http://catalog.tamu.edu/undergraduate/appendices>) in this catalog.

Department of Marine Biology

The MS and PhD degrees in Marine Biology are taught by marine biologists within the Texas A&M University System (TAMUS). The program is interdisciplinary, involving courses and linking faculty from the Texas A&M University at Galveston (TAMUG), Texas A&M Colleges of Science (SCI), Agriculture and Life Sciences (COALS), and Geosciences (GEOS), and Texas A&M University-Corpus Christi (TAMU-CC).

The goal of the Marine Biology Interdisciplinary graduate program is to attract high-quality students interested in one or a combination of the sub-disciplines of marine biology who wish to pursue careers in higher education, government, or private industry. The structure of the education provided by the program will ensure that highly qualified individuals will be sent into the job market or on to further education. Employment of graduates will be related to environmental and living resource regulation and management within all levels of government; industries related to or affected by resource utilization and management; and within all levels of academia, including teaching and conducting both basic and applied research.

The degree program will focus on independently supervised research complemented by formal coursework. Essential components of the program include the following:

- a diverse curriculum available on all three campuses;
- original, supervised scholarly research, to be written and formally defended as a professional paper, thesis or dissertation;
- efficiency obtained by sharing the diversity of courses already offered at the three participating entities facilitated by distance learning technologies;
- all students will benefit from distance technologies by having access to various courses offered at the alternative campuses and the ability to interact with members of their committees and others from whom they are separated by distance.

Students will earn one of the following degrees:

- Master of Science, thesis option: a research degree with a broad curriculum and a rigorous program of field or laboratory thesis research; 32 total semester credit hours including thesis; or
- Master of Science, non-thesis option: a professional development degree that provides advanced coursework on a range of topics in marine biology and culminates in a professional paper on a approved topic; this option is not intended as a research degree and does not include independent laboratory or field research experience; 36 total semester credit hours; or
- Doctor of Philosophy: a research degree with a broad curriculum and a dissertation based on rigorous and in-depth field or laboratory research; requires a minimum of 64 total semester hours beyond the MS degree or a minimum of 96 total semester hours beyond the BS degree, including dissertation.

Faculty

Alvarado-Bremer, Jaime, Professor
Marine Biology
PHD, University of Toronto, 1994

Armitage Chan, Anna R, Associate Professor
Marine Biology
PHD, University of California, Los Angeles, 2003

Davis, Randall W, Professor
Marine Biology
PHD, University of California at San Diego, 1980

Eytan, Ron I, Assistant Professor
Marine Biology
PHD, Louisiana State University, 2010

Hala, David, Assistant Professor
Marine Biology
PHD, Brunel University, 2007

Iliffe, Thomas M, Professor
Marine Biology
PHD, University of Texas Medical Branch at Galveston, 1977

Jurgens, Laura, Assistant Professor
Marine Biology
PHD, University of California Davis, 2015

Labonte, Jessica, Assistant Professor
Marine Biology
PHD, University of British Columbia, 2013

Liu, Hui, Associate Professor
Marine Biology
PHD, University of Alaska Fairbanks, 2006

MATICH, PHILIP, Instructional Assistant Professor
Marine Biology
PHD, Florida International University, 2014

Marshall, Christopher, Professor
Marine Biology
PHD, University of Florida, 1997

Miglietta, Maria P, Assistant Professor
Marine Biology
PHD, Duke University, 2005

Moulton, Orissa M, Instructional Assistant Professor
Marine Biology
PHD, The University of Chicago, 2016

Petersen, Lene H, Instructional Assistant Professor
Marine Biology
PHD, Memorial University of New Foundland, 2010

Quigg, Antonietta S, Professor
Marine Biology
PHD, Monash University, 2000

Rooker, Jay R, Professor
Marine Biology
PHD, The University of Texas - Austin, 1997

Rowe, Gilbert T, Senior Professor
Marine Biology
PHD, Duke University, 1968

Schulze, Anja, Associate Professor
Marine Biology
PHD, University of Victoria, Canada, 2001

Schwarz, John R, Senior Professor
Marine Biology
PHD, Rensselaer Polytechnic Institute, 1972

Sirovic, Ana, Associate Professor
Marine Biology
PHD, University of California San Diego, 2006

Steichen, Jamie L, Lecturer
Marine Biology
PHD, Texas A&M University, 2012

Wells, Robert J, Associate Professor
Marine Biology
PHD, Louisiana State University, 2007

Masters

- Master of Science in Marine Biology (p. 90)

Doctoral

- Doctor of Philosophy in Marine Biology (p. 95)

Master of Science in Marine Biology

The Master of Science degree in Marine Biology is a joint degree program with Texas A&M University, Texas A&M University Galveston Campus and Texas A&M University–Corpus Christi. The program is interdisciplinary, involving courses and linking faculty from the TAMU Colleges of Science (SCI), Agriculture and Life Sciences (COALS), Geosciences (GEOS), TAMU Galveston Campus (TAMUG) and TAMU-Corpus Christi (TAMUCC).

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

1. Meet with departmental graduate advisor to plan course of study for first semester. **When:** Before first semester registration. **Approved by:** Graduate advisor or chair of the intercollegiate faculty.

| | | | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). | 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. | 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. | ¹ The online Document Processing Submission System is located on the website https://ogsdps.tamu.edu . ² Complete the application for degree form via the student's Howdy portal. | | |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. | | | |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. | | | |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | | | |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. | | | |

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 91)
- Degree Plan (p. 91)
- Credit Requirements (p. 91)
- Transfer of Credit (p. 91)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 92)
- Thesis Option (p. 92)
 - Thesis Proposal (p. 93)
 - Final Examination/Thesis Defense (p. 93)
- Non-Thesis Option (p. 93)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<http://ogsdpss.tamu.edu>).

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree.

A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.

2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 or 685 course is only allowed for non-thesis option master's students. A zero credit 681 course can be used for either thesis or non-thesis option master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Continuing education courses may not be used for graduate credit.
9. Extension courses are not acceptable for credit.
10. For non-distance degree programs, no more than 50 percent of the credit hours required for the program may be completed through distance education courses.
11. To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the *Thesis Manual*, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies

Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory

committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master

of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 93)
- Continuous Registration (p. 94)
- Time Limit (p. 94)
- Foreign Languages (p. 94)
- Application for Degree (p. 94)
- Licensing Program Requirements (p. 94)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Licensing Program Requirements

Course Requirements for all Texas A&M Maritime Academy Third Mate Licensing Programs

Through the Texas A&M Maritime Academy, TAMUG offers license training for Midshipmen leading to a Third Mates' License (Unlimited Tonnage, Un limited Oceans). The curriculum for Marine Biology - LO, Marine Sciences - LO and Marine Transportation include this training. All graduate programs offered by TAMUG may include this license training as an option. Each degree candidate will be required to fulfill the existing university degree requirements plus all U.S. Coast Guard License Option additional requirements to complete STCW Training Record Book:

| Code | Title | Semester Credit Hours |
|-------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------|
| Shoreside Courses: | | |
| MART 103 | Basic Safety and Lifeboatman Training | 3 |
| MART 115 | Seamanship I | 3 |
| MART 201 | Vessel Structure and Ship Knowledge | 3 |
| MART 202 | Ship Stability and Trim | 3 |
| MART 204 | Terrestrial Navigation | 3 |
| MART 208 | Maritime Meteorology | 3 |
| MART 210 | Integrated Navigation I: RADAR/ARPA/ECDIS | 4 |
| MART 212 | Marine Dry Cargo Operations | 3 |
| MART 215 | Seamanship II | 3 |
| MART 303 | Celestial Navigation | 3 |
| MART 307 | Global Maritime Distress Safety System | 3 |
| MART 310 | Integrated Navigation II: Electronic Navigation | 2 |
| MART 313 | Marine Liquid Cargo Operations | 3 |
| MART 321 | Navigation Rules, International and Inland | 2 |
| MART 410 | Integrated Navigation III: Bridge Watchstanding | 2 |
| MART 498 | Maritime Medical Care | 2 |
| NVSC 200 | Naval Science for the Merchant Marine Officer | 3 |
| Cruise Coursework: | | |
| MART 200 | Deck Sea Training I: Basic Communications, Navigation and Seamanship | 4 |
| MART 300 | Deck Sea Training II: Intermediate Communications, Navigation and Seamanship | 4 |
| or MART 350 or Deck Sea Training II – Commercial Internship | | |

| | | |
|----------|---------------------------------------------------------------------------|---|
| MART 400 | Deck Sea Training III: Advanced Communications, Navigation and Seamanship | 4 |
|----------|---------------------------------------------------------------------------|---|

Courses complete a Training Record Book which includes USCG required Basic Safety Training, Ratings Performing a Navigational Watch, First Aid Provider, and Officer in Charge of a Navigational Watch. All STCW related courses must be completed with a C or better to meet license standards. Furthermore, the Midshipmen are required to complete mandatory sea service, participate in the USCG approved Corps of Midshipmen License Option Program, complete a degree, and pass license examination administered by the USCG. Candidates will also have to follow all regulations set forth in 46 CFR I 1.910 and 46 CFR 310, STCW as amended, and USCG Texas A&M Maritime Academy approved Standard Operating Procedure and any other regulations required by Texas A&M Maritime Academy License Option programs.

This degree requires full participation in the Texas A&M University Maritime Academy Corps of Cadets as a qualified License Option cadet. Refer to the University catalog section for the Texas A&M Maritime Academy for detailed requirements. In addition to the academic requirements outlined here, the cadet must also complete the following requirements to receive the degree:

- Successfully complete required sea service and minimum training cruise requirements.
- Pass a comprehensive professional examination (either the Third Mate Unlimited- Oceans or Third Assistant Engineering Unlimited) administered by the U.S. Coast Guard (USCG).
- Successfully complete all competencies required by the International Convention on Standards for Training, Certification and Watchkeeping (STCW).

Note: STCW competency certifications expire 5 years after completion. If the cadet does not complete the degree within that time period, the cadet will be required to revalidate the expired competency prior to graduation.

Doctor of Philosophy in Marine Biology

The PhD degree in Marine Biology is a joint degree program with Texas A&M University, Texas A&M University Galveston Campus and Texas A&M University–Corpus Christi. The program is interdisciplinary, involving courses and linking faculty from the TAMU Colleges of Science (SCI), Agriculture and Life Sciences (COALS), Geosciences (GEOS), TAMU Galveston Campus (TAMUG) and TAMU-Corpus Christi (TAMUCC).

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | | | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. | 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. |
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| | | | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| | | | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| | | | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 96)
- Degree Plan (p. 96)
- Transfer of Credit (p. 97)
- Research Proposal (p. 97)
- Examinations (p. 97)
 - Preliminary Examination (p. 97)
 - Preliminary Examination Format (p. 97)
 - Preliminary Examination Scheduling (p. 98)
 - Report of Preliminary Examination (p. 98)
 - Retake of Failed Preliminary Examination (p. 98)
 - Final Examination (p. 98)
 - Report of Final Examination (p. 99)
- Dissertation (p. 99)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate

supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdps.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies.

These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the

student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination

Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from

the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 99)
- Time Limit (p. 100)

- Continuous Registration (p. 100)
- Admission to Candidacy (p. 100)
- Languages (p. 100)
- 99-Hour Cap on Doctoral Degree (p. 100)
- Application for Degree (p. 101)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all

requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology

- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Department of Marine Sciences

The Department of Marine Sciences (<http://www.tamug.edu/mars/>) provides high quality undergraduate and graduate education and research in the physical sciences related to the coastal and marine environment as well as in management and policy decision-making for the utilization and preservation of marine resources. The department is located at Texas A&M University Galveston Campus, a special-purpose institution of higher education for undergraduate and graduate instruction in marine and maritime studies in science, engineering and business and for research and public service related to the general field of marine resources.

At the graduate level, the Department of Marine Sciences offers the Master of Marine Resources Management (MARM) degree for both research (thesis) and professional (non-thesis) track students. We also have a 3+2 Program in which the student can achieve the B.S. OCRE (Ocean and Coastal Resources) with the MARM degree in 5 years. The MARM degree provides students with a broad understanding of coastal and ocean policy and management. This degree program views marine natural resources management and policy development from both an ecological and policy perspective. The demand for graduates from this program in industry, government, academia and non-governmental organizations (NGO's) has never been stronger. The Masters tab above provides details of the program overview and requirements.

Our faculty members who have joint or graduate faculty appointments with other departments and programs at TAMU/TAMUG advise graduate students in diverse M.S. and Ph.D. graduate degrees on our campus such as the Interdisciplinary Program in Marine Biology (MARB IDP) and programs in conjunction with TAMU's Departments such as Oceanography (OCNG), Landscape Architecture & Urban Planning (LAUP), and Geography (GEOG). The departmental website (<http://www.tamug.edu/mars/faculty/index.html>) provides more information of our faculty's fields of expertise and appointments with other departments and programs.

Faculty

Alexander, Steve K, Lecturer
Marine Science
PHD, Louisiana State University, 1976

Amon, Rainer, Professor
Marine Science
PHD, University of Texas at Austin, 1995

Anis, Ayal, Associate Professor
Marine Science
PHD, Oregon State University, 1993

Bodson, Bruce R, Lecturer
Marine Science
JD, South Texas College of Law, 1993

Brody, Samuel D, Professor
Marine Science
PHD, University of North Carolina, 2002

Davlasheridze, Meri, Assistant Professor
Marine Science
PHD, Pennsylvania State University, 2013

Dellapenna, Timothy M, Associate Professor
Marine Science
PHD, The College of William & Mary, 1999

Highfield, Wesley E, Associate Professor
Marine Science
PHD, Texas A&M University, 2008

Jones, Glenn A, Professor
Marine Science
PHD, Columbia University, 1983

Kaiser, Karl, Associate Professor
Marine Science
PHD, University of South Carolina, 2009

Louchouart, Patrick, Professor
Marine Science
PHD, Université du Québec à Montréal, 1997

Merrell Jr, William J, Professor
Marine Science
PHD, Texas A&M University, 1971

Mohler, Robert R, Senior Lecturer
Marine Science
PHD, Texas A&M University, 1994

Park, Kyeong, Professor
Marine Science
PHD, College of William and Mary, 1993

Retchless, David P, Assistant Professor
Marine Science
PHD, Pennsylvania State University, 2015

Ross-Wootton, Ashley D, Assistant Professor
Marine Science
PHD, Texas A&M University, 2010

Santschi, Peter H, Professor
Marine Science
PHD, Universität Bern, 1975

Van Hengstum, Peter J, Assistant Professor
Marine Science
PHD, Dalhousie University, Canada, 2011

Masters

- Master of Marine Resources Management in Marine Resources Management (p. 1923)

Master of Marine Resources Management in Marine Resources Management

The Marine Resources Management program is a 36 hour degree program with both Professional (non-thesis) and Research (thesis) Tracks. Twenty-two hours of courses constitute the core of the program, which includes courses focused on quantitative and research methods, geographic information systems, and environmental and natural resource policy, management and planning. All MMRM students also have the ability to earn a GIS certificate through elective coursework. The MMRM program is designed for both continuing students and professionals who have a desire to engage in the management of coastal and ocean resources as part of their career goals. Our graduates are employed by private sector employers in the areas of oil and natural gas, environmental consulting companies, ports, and the tourism industry; federal and state government sectors including the U.S. Coast Guard, the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Texas General Land Office and the Texas Commission on Environmental Quality; and academic and non-governmental organizations.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1923)
- Degree Plan (p. 1924)
- Credit Requirements (p. 1924)
- Transfer of Credit (p. 1924)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1925)
- Thesis Option (Research Track) (p. 1925)
 - Thesis Proposal (p. 1925)
 - Final Examination/Thesis Defense (p. 1925)
- Non-Thesis Option (Professional Track) (p. 1926)

Student's Advisory Committee

Upon receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System (<https://ogsdps.tamu.edu>).

A student submitting a proposed degree plan for a MARM degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes

can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 36 semester credit hours of approved courses and research is required for the Thesis Option (Research Track) MARM students. A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option (Professional Track) MARM students.

The 36-hour Thesis Option (Research Track) curriculum is structured with 22 hours of the required courses and 14 hours of optional elective courses. Students should consult with the Graduate Advisor or their advisory committee concerning required and elective coursework. Additional flexibility to replace required courses targeted to their area of research is available to Thesis Option (Research Track) students upon recommendation and approval by their advisory committees and the department.

The 36-hour Non-Thesis Option (Professional Track) curriculum is structured with 24 hours of required courses and 12 hours of optional elective courses. Students should consult with the Graduate Advisor or their advisory committee concerning required and elective coursework. Additional flexibility to replace required courses with courses targeted to their area of research is available to Non-Thesis Option (Professional Track) students upon recommendation and approval by their committee and the department.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not acceptable for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Grades for courses completed at other institutions are not included in computing the GPR.

Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the Registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 12 hours in 691 (Research) may be used - Thesis Option (Research Track) only. Non-Thesis Option (Professional Track) students are not allowed to enroll in 691 (Research).
 - No credit hours of 684 (Professional Internship) or 693 (Professional Studies) may be used - Thesis Option (Research Track) only. Non-Thesis Option (Professional Track) students are allowed to take no more than 4 hours of 684 (Professional Internship) and not more than 3 hours of 693 (Professional Studies).
 - Not more than 8 hours of 685 (Directed Studies) may be used - Thesis Option (Research Track) only. Non-Thesis Option (Professional Track) students are allowed to take no more than 9 hours of 685 (Directed Studies).
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option (Research Track)

An acceptable thesis is required for the MARM degree for a student who selects the Thesis Option (Research Track) program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies (<http://ogaps.tamu.edu>) website.

Before a student can be "cleared" by Thesis and Dissertation Services, a processing fee must be paid through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the Thesis Option (Research Track) MARM degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety (<http://rcb.tamu.edu>) website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all**

courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan. To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students (Research Track), the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option (Research Track) candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-thesis Option (Professional Track)

For the Non-Thesis Option (Professional Track) student, a thesis is not required. A final comprehensive examination is required. Exemptions from final examinations are not allowed. Additionally, a technical paper

prepared on a topic relevant to Marine Resources Management is required for Non-Thesis Option (Professional Track) students to complete the MARM degree. The technical paper will be developed under the guidance of the student's advisory committee.

The final examination cannot be held prior to the mid point of the final semester if questions on the examination are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship).

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the Non-Thesis Option (Professional Track) is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a professional track MARM degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the professional track MARM degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the professional track MARM degree other than those specified above are the same as for the research track degree.

Additional Requirements

Additional Requirements

- Residence (p. 1926)
- Continuous Registration (p. 1927)
- Time Limit (p. 1927)
- Foreign Languages (p. 1927)
- Application for Degree (p. 1927)
- Licensing Program Requirements (p. 1927)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Marine Resources Management, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Marine Resources Management program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Marine Resources Management degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Licensing Program Requirements

Course Requirements for all Texas A&M Maritime Academy Third Mate Licensing Programs

Through the Texas A&M Maritime Academy, TAMUG offers license training for Midshipmen leading to a Third Mates' License (Unlimited Tonnage, Un limited Oceans). The curriculum for Marine Biology - LO, Marine Sciences - LO and Marine Transportation include this training. All graduate programs offered by TAMUG may include this license training as an option. Each degree candidate will be required to fulfill the existing university degree requirements plus all U.S. Coast Guard License Option additional requirements to complete STCW Training Record Book:

| Code | Title | Semester Credit Hours |
|--------------------|-------------------------------------------|-----------------------|
| Shoreside Courses: | | |
| MART 103 | Basic Safety and Lifeboatman Training | 3 |
| MART 115 | Seamanship I | 3 |
| MART 201 | Vessel Structure and Ship Knowledge | 3 |
| MART 202 | Ship Stability and Trim | 3 |
| MART 204 | Terrestrial Navigation | 3 |
| MART 208 | Maritime Meteorology | 3 |
| MART 210 | Integrated Navigation I: RADAR/ARPA/ECDIS | 4 |

| | | |
|----------|-------------------------------------------------|---|
| MART 212 | Marine Dry Cargo Operations | 3 |
| MART 215 | Seamanship II | 3 |
| MART 303 | Celestial Navigation | 3 |
| MART 307 | Global Maritime Distress Safety System | 3 |
| MART 310 | Integrated Navigation II: Electronic Navigation | 2 |
| MART 313 | Marine Liquid Cargo Operations | 3 |
| MART 321 | Navigation Rules, International and Inland | 2 |
| MART 410 | Integrated Navigation III: Bridge Watchstanding | 2 |
| MART 498 | Maritime Medical Care | 2 |
| NVSC 200 | Naval Science for the Merchant Marine Officer | 3 |

Cruise Coursework:

| | | |
|-------------------------------------------------------------|------------------------------------------------------------------------------|---|
| MART 200 | Deck Sea Training I: Basic Communications, Navigation and Seamanship | 4 |
| MART 300 | Deck Sea Training II: Intermediate Communications, Navigation and Seamanship | 4 |
| or MART 350 or Deck Sea Training II – Commercial Internship | | |
| MART 400 | Deck Sea Training III: Advanced Communications, Navigation and Seamanship | 4 |

Courses complete a Training Record Book which includes USCG required Basic Safety Training, Ratings Performing a Navigational Watch, First Aid Provider, and Officer in Charge of a Navigational Watch. All STCW related courses must be completed with a C or better to meet license standards. Furthermore, the Midshipmen are required to complete mandatory sea service, participate in the USCG approved Corps of Midshipmen License Option Program, complete a degree, and pass license examination administered by the USCG. Candidates will also have to follow all regulations set forth in 46 CFR I 1.910 and 46 CFR 310, STCW as amended, and USCG Texas A&M Maritime Academy approved Standard Operating Procedure and any other regulations required by Texas A&M Maritime Academy License Option programs.

This degree requires full participation in the Texas A&M University Maritime Academy Corps of Cadets as a qualified License Option cadet. Refer to the University catalog section for the Texas A&M Maritime Academy for detailed requirements. In addition to the academic requirements outlined here, the cadet must also complete the following requirements to receive the degree:

- Successfully complete required sea service and minimum training cruise requirements.
- Pass a comprehensive professional examination (either the Third Mate Unlimited- Oceans or Third Assistant Engineering Unlimited) administered by the U.S. Coast Guard (USCG).

- Successfully complete all competencies required by the International Convention on Standards for Training, Certification and Watchkeeping (STCW).

Note: STCW competency certifications expire 5 years after completion. If the cadet does not complete the degree within that time period, the cadet will be required to revalidate the expired competency prior to graduation.

Department of Maritime Business Administration

For more information on the Department of Maritime Business Administration, please visit <http://www.tamug.edu/mara>.

Faculty

Bomer Galvao, Cassia, Assistant Professor
Maritime Business Administration
PHD, Pontificia Universidade Catolica, 2017

Fertitta, Kelli, Instructional Assistant Professor
Maritime Business Administration
JD, South Texas College of Law, 2013

Hammady Brho, Mazen, Assistant Professor
Maritime Business Administration
PHD, University of North Texas, 2018

Knox, Kris J, Instructional Professor
Maritime Business Administration
PHD, University of Texas HSC at Houston, 1992

Mileski, Joan P, Professor
Maritime Business Administration
PHD, University of Texas at Dallas, 2000

Mykoniatis, Nikolaos, Instructional Assistant Professor
Maritime Business Administration
PHD, The Pennsylvania State University, 2013

Nwabueze, Uchenna M, Instructional Professor
Maritime Business Administration
PHD, Sheffield Hallam University, City Campus, 1995

Wang, Ping, Assistant Professor
Maritime Business Administration
PHD, The Ohio State University, 2007

Wang, Wen-Yao, Associate Professor
Maritime Business Administration
PHD, Texas A&M University, 2008

Waterworth, Leonard D, Executive Professor
Maritime Business Administration
MS, US Army War College, 2000

Wiseman, Melissa, Instructional Professor
Maritime Business Administration
PHD, Texas Tech University, 1999

Masters

- Master of Maritime Administration and Logistics in Maritime Administration and Logistics (p. 1928)

Master of Maritime Administration and Logistics in Maritime Administration and Logistics

The Master of Maritime Administration and Logistics is a professional graduate management degree that helps the student develop an integrated understanding of the centrality of ports and interconnected transportation systems to the international and domestic commerce of the United States and to the general global trading system. Coursework in international trade, economics, finance, marketing, management, logistics, port management and environmental science will prepare graduates for senior management positions in a wide variety of industries associated with logistics and, most specifically, waterborne commerce.

Southeast Texas, from the Louisiana border to Freeport, contains the important ports of Beaumont-Port Arthur, Galveston, Houston and Freeport, an important segment of the Gulf Intracoastal Waterway (GIWW), and a significant portion of the oil refining capacity of the United States. This maritime complex contains a rich diversity of cargo handling facilities which connect to the main east-west and north-south rail and road arteries of the nation. Port activity in the region is steadily expanding as world trade and the general globalization of business increases. The opening of the new locks of the Panama Canal will dramatically increase regional port and logistics activity and the associated need for professionals with advanced degrees. Additionally, increased energy exploration and recovery activities in the Gulf of Mexico are expected to stimulate 2-3 trillion dollars of economic investment in the coastal zone of Texas in the next few decades. This investment will sustain continued economic growth for the foreseeable future. The combination of these two circumstances—the general increase in world trade and the expanding energy industry in the Gulf of Mexico—will provide exciting and challenging opportunities throughout the energy, maritime and all other transportation industries.

The graduate program in Maritime Administration and Logistics will attract dynamic and forward looking students who understand the implications of expanding regional and international trade. Some students will want to complete the thesis option, which requires preparation of a graduate thesis involving original research. This is strongly recommended for students who intend to continue their education at the doctoral level. The non-thesis option does not preclude future work toward a doctorate but is most appropriate for students who see this graduate program as their final professional degree. Thesis students will be supervised by a graduate advisory committee that is responsible for development of their final degree plan. There is a fully online delivery option for the degree for students who wish to complete the program off campus.

Graduate programs in business typically are delivered by both full time and part-time/adjunct faculty who are active researchers and practitioners in their fields. Proximity to the Houston-Galveston port complex allows ready access to extremely well qualified faculty, to research opportunities, and to challenging and exciting professional career opportunities following graduation. The websites of the Department of Maritime Business Administration and the Department of Marine Sciences contain biographical summaries of all faculty who will teach in this program and their research interests.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1929)
- Degree Plan (p. 1929)
- Credit Requirement (p. 1929)
- Transfer of Credit (p. 1930)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1930)
- Thesis Option (p. 1930)
 - Thesis Proposal (p. 1931)
 - Final Examination/Thesis Defense (p. 1931)
- Non-Thesis Option (p. 1931)

Student's Advisory Committee

On-Campus and Distance Education Degree Programs

For the Non-Thesis Student:

All MMAL non-thesis students' advisory committees will consist of the departmental graduate advisor for the MMAL program or the department head for the Maritime Administration department. The departmental graduate advisor or the department head has the responsibility of approving the proposed degree plan for all non-thesis MMAL students.

For the Thesis Student:

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the master's degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be

near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

On-Campus and Distance Education Degree Programs

Each graduate student must submit an official degree plan to the Office of Graduate and Professional Studies (OGAPS) for approval. The degree plan formally declares his/her degree objective, the membership of the advisory committee, and the specific courses that she/he will be required to complete as part of the degree program. She/he will develop their proposed degree plan in consultation with their designated advisory committee. The Head of the Department of Maritime Administration must approve all degree plans. Completed degree plans must be submitted to OGAPS according to the following regulation with the student meeting which ever of these deadlines falls earliest:

- Following the deadline imposed by the student's college or interdisciplinary degree program.
- No later than 90 days prior to the date of the final oral examination or thesis defense – thesis students only.
- According to deadlines published in the OGAPS calendar each semester for graduation that semester. The calendar may be found at <http://ogaps.tamu.edu>.

Specific rules and limitations on coursework and committee membership can be found in the *Texas A&M University Graduate and Professional Catalog*. Once a degree plan is approved by OGAPS, changes in coursework or committee membership may be requested by petition to OGAPS. Changes of major, degree or department must be requested by submitting a petition and/or a new degree plan/coursework petition. Additional flexibility to replace required courses with courses targeted to their area of research is available to thesis option students upon recommendation and approval by their committee and the department head.

Credit Requirement

On-Campus and Distance Education Degree Programs

A minimum of 36 semester credit hours of approved courses and research hours are required for Thesis Option (Research Track)

MAAL students. A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option (Professional Track) MAAL students.

The 36-hour Thesis Option (Research Track) curriculum is structured with 21 hours of required courses and 15 hours of electives. Students may use up to 6 hours of their elective coursework as MARA 691 research hours. Students should consult with the Graduate Advisor or their advisory committee regarding required and elective coursework.

The 36-hour Non-Thesis Option (Professional Track) curriculum is structured with 21 hours of required courses and 15 hours of elective coursework. Students should consult with the Graduate Advisor or their advisory committee regarding required and elective coursework.

Transfer of Credit

On-Campus and Distance Education Degree Programs

Students may transfer a maximum of 12 hours of courses or one-third of the total hours of the degree plan, whichever number is greater, from an approved institution upon the advice of their advisory committee. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or better might be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University at Galveston or at the institution at which the courses were taken, and if the courses would be accepted for credit toward a similar degree for students in degree-seeking status at the host institution.

Coursework in which no formal grades are given or in which grades other than letter grades (A, B, C, etc.) are given (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. Students must have an official transcript sent directly from the university in which the transfer coursework was taken to the Texas A&M at Galveston Office of Admissions and Records. Courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

On-Campus and Distance Education Degree Programs

If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The total of any combination of A and B below may not exceed the greater of either 12 hours or one third (1/3) of the total hours on the degree plan. The following restrictions apply:
 - a. Courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater, will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for students in degree-seeking status at the host

institution. Courses previously used for another degree are not acceptable for degree plan credit.

- b. A maximum of 12 credit hours of 489 and/or 689 (Special Topics).
2. A maximum of 8 hours of 691 (Research), 4 hours of 684 (Professional Internship), or 9 hours of 485 and/or 685 (Directed Studies), and up to 3 hours of 690 (Theory of Research) or 695 (Frontiers in Research). Any combination of 684, 685, 690, 691 and 695 may not exceed one-fourth (1/4) of the total credit hour requirement shown on the individual degree plan.
3. A zero credit 684 and 685 course is only allowed for non-thesis option master's students. Other courses, including 6941 research hour, are not eligible for zero credit.
4. A maximum of 2 hours of Seminar (481/681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. No credit may be obtained by correspondence study. (Courses in the student's degree plan which may be delivered in whole or in part by electronic means are not considered "correspondence study.")
7. For graduate courses of three weeks' duration or less, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. Extension courses are not acceptable for credit.

Exceptions will only be permitted in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

On-Campus and Distance Education Degree Programs

The thesis option is designed to allow the student to demonstrate research capabilities through developing an independent and thorough investigation of a particular problem of interest. This would also prepare the student for further graduate studies. An acceptable thesis is required for the Master of Maritime Administration and Logistics degree for students who select the thesis option program. The finished work must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, and the significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual which is available online at <http://ogaps.tamu.edu>.

After successful defense (or exemption from) and approval by the student's advisory committee and the Head of the Department of Maritime Administration, students must submit their thesis to . Students must submit their thesis in electronic format as a single PDF file.

No credit hours of 684 (Professional Internship) may be used for the thesis option for the Master of Maritime Administration and Logistics degree. A maximum of 8 credit hours of 691 (Research) or 485 and/or 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the thesis option of the Master of Maritime Administration and Logistics degree. In addition, any combination of 685, 690, 691 and 695 may not exceed 12 credit hours.

The 36-hour thesis-option curriculum is structured with 21 hours of required courses and 15 hours of optional elective courses of which at least 6 hours are in 691 courses. Additional flexibility to replace required courses targeted to their area of research is available to thesis-option

students upon recommendation and approval by their committees and the Head of the Department of Maritime Administration.

Thesis Proposal

On-Campus and Distance Education Degree Programs

For the thesis option, the student must prepare a thesis proposal for approval by the advisory committee and the head of the Department of Maritime Administration. This proposal must be submitted to the Office of Graduate and Professional Studies at least 15 working days prior to the submission of the request for the final examination. There are compliance issues that must be addressed if graduate students are performing research involving human subjects, animals, infectious biohazards and recombinant DNA. Students involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website rcb.tamu.edu.

Final Examination/Thesis Defense

On-Campus and Distance Education Degree Programs

This section applies to thesis students only.

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or

interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Non-Thesis Option

On-Campus and Distance Education Degree Programs

A final examination is not required for the non-thesis option.

Additional Requirements

Additional Requirements

- Residence (p. 1931)
- Continuous Registration (p. 1931)
- Time Limit (p. 1931)
- Scholarship (p. 1931)
- Application to Degree (p. 1932)
- Licensing Program Requirements (p. 1932)

Residence

On-Campus and Distance Education Degree Programs

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

Continuous Registration

On-Campus and Distance Education Degree Programs

Students in the thesis option of the Master of Maritime Administration and Logistics program who have completed all coursework on their degree plans other than 691 (Research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

On-Campus and Distance Education Degree Programs

All degree requirements for a master's degree must be completed within a period of seven consecutive years for the degree to be granted. A course will be considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old may not be used to satisfy degree requirements.

Scholarship

On-Campus and Distance Education Degree Programs

Graduate students must maintain a grade point ratio (GPR) of 3.000 (B average based on a 4.000 scale) for all courses which are listed on the

degree plan and for all graded graduate and advanced undergraduate coursework (300- and 400-level) completed at Texas A&M University at College Station and/or Texas A&M University at Galveston and eligible to be applied toward a graduate degree. If either of a student's cumulative GPR or the GPR for courses listed on the degree plan falls below the minimum of 3.000, he or she will be considered to be scholastically deficient. If the minimum cumulative GPR is not attained in a reasonable length of time, the student may be dropped from graduate studies. The procedures for dismissal are explained in the Texas A&M University Student Rules.

Application for Degree

On-Campus and Distance Education Degree Programs

For information on applying for your degree, please visit the Graduation (p. 26) section.

Licensing Program Requirements

On-Campus and Distance Education Degree Programs

Course Requirements for all Texas A&M Maritime Academy Third Mate Licensing Programs

Through the Texas A&M Maritime Academy, TAMUG offers license training for Midshipmen leading to a Third Mates' License (Unlimited Tonnage, Un limited Oceans). The curriculum for Marine Biology - LO, Marine Sciences - LO and Marine Transportation include this training. All graduate programs offered by TAMUG may include this license training as an option. Each degree candidate will be required to fulfill the existing university degree requirements plus all U.S. Coast Guard License Option additional requirements to complete STCW Training Record Book:

| Code | Title | Semester Credit Hours |
|--------------------|-------------------------------------------------|-----------------------|
| Shoreside Courses: | | |
| MART 103 | Basic Safety and Lifeboatman Training | 3 |
| MART 115 | Seamanship I | 3 |
| MART 201 | Vessel Structure and Ship Knowledge | 3 |
| MART 202 | Ship Stability and Trim | 3 |
| MART 204 | Terrestrial Navigation | 3 |
| MART 208 | Maritime Meteorology | 3 |
| MART 210 | Integrated Navigation I: RADAR/ARPA/ECDIS | 4 |
| MART 212 | Marine Dry Cargo Operations | 3 |
| MART 215 | Seamanship II | 3 |
| MART 303 | Celestial Navigation | 3 |
| MART 307 | Global Maritime Distress Safety System | 3 |
| MART 310 | Integrated Navigation II: Electronic Navigation | 2 |
| MART 313 | Marine Liquid Cargo Operations | 3 |
| MART 321 | Navigation Rules, International and Inland | 2 |
| MART 410 | Integrated Navigation III: Bridge Watchstanding | 2 |

| | | |
|-------------------------------------------------------------|------------------------------------------------------------------------------|---|
| MART 498 | Maritime Medical Care | 2 |
| NVSC 200 | Naval Science for the Merchant Marine Officer | 3 |
| Cruise Coursework: | | |
| MART 200 | Deck Sea Training I: Basic Communications, Navigation and Seamanship | 4 |
| MART 300 | Deck Sea Training II: Intermediate Communications, Navigation and Seamanship | 4 |
| or MART 350 or Deck Sea Training II – Commercial Internship | | |
| MART 400 | Deck Sea Training III: Advanced Communications, Navigation and Seamanship | 4 |

Courses complete a Training Record Book which includes USCG required Basic Safety Training, Ratings Performing a Navigational Watch, First Aid Provider, and Officer in Charge of a Navigational Watch. All STCW related courses must be completed with a C or better to meet license standards. Furthermore, the Midshipmen are required to complete mandatory sea service, participate in the USCG approved Corps of Midshipmen License Option Program, complete a degree, and pass license examination administered by the USCG. Candidates will also have to follow all regulations set forth in 46 CFR I 1.910 and 46 CFR 310, STCW as amended, and USCG Texas A&M Maritime Academy approved Standard Operating Procedure and any other regulations required by Texas A&M Maritime Academy License Option programs.

This degree requires full participation in the Texas A&M University Maritime Academy Corps of Cadets as a qualified License Option cadet. Refer to the University catalog section for the Texas A&M Maritime Academy for detailed requirements. In addition to the academic requirements outlined here, the cadet must also complete the following requirements to receive the degree:

- Successfully complete required sea service and minimum training cruise requirements.
- Pass a comprehensive professional examination (either the Third Mate Unlimited- Oceans or Third Assistant Engineering Unlimited) administered by the U.S. Coast Guard (USCG).
- Successfully complete all competencies required by the International Convention on Standards for Training, Certification and Watchkeeping (STCW).

Note: STCW competency certifications expire 5 years after completion. If the cadet does not complete the degree within that time period, the cadet will be required to revalidate the expired competency prior to graduation.

This program prepares students for the opportunity to pursue an occupational license. Please refer to the Notification for Students Pursuing an Occupational License in our catalog for additional information.

TEXAS A&M UNIVERSITY AT QATAR

Texas A&M University at Qatar Joint Advisory Board

The Joint Advisory Board (JAB) of Texas A&M University at Qatar was established 25 May 2003, between Texas A&M University and Qatar Foundation for Education, Science and Community Development to provide advice regarding the management and operation of Texas A&M at Qatar the Dean and CEO and to Qatar Foundation. The JAB is primarily responsible for ongoing review and evaluation of the success of Texas A&M at Qatar.

Joint Advisory Board Members

His Excellency, Mohammed bin Saleh Al-Sada. Ph.D. — Chairman
Former Minister of Energy and Industry, State of Qatar

Carol A. Fierke, Ph.D. — Vice Chair
Provost and Executive Vice President, Texas A&M University

M. Katherine Banks, Ph.D.
Vice Chancellor for Engineering, The Texas A&M University System
Dean, College of Engineering at Texas A&M University
Director, Texas Engineering Experiment Station

W.L. (Bill) Bullock, Jr.
President, Asia Pacific & Middle East, ConocoPhillips

Olivier Dubrule, Ph.D.
Professor, Department of Earth Sciences and Engineering, Imperial
College London

Pam Matthews, Ph.D.
Dean of the College of Liberal Arts, Texas A&M

Robert Gordon Moore, Ph.D.
Professor, Chemical and Petroleum Engineering Department, University of
Calgary, Canada

Alistair Routledge
President and General Manager, ExxonMobil Qatar

Marc Vermeersch, Ph.D.
Executive Director, Qatar Environment and Energy Research Institute
(QEERI)

Ex-officio Members

Buthaina A. Al-Nuaimi
President of Pre-University Education, Qatar Foundation

César O. Malavé, Ph.D., P.E.
Dean, Texas A&M University at Qatar

Ioannis G. Economou, Ph.D. — Secretariat
Associate Dean
Professor of Chemical Engineering, Texas A&M University at Qatar

Texas A&M University at Qatar Administrative Officers

The leadership of Texas A&M University at Qatar is responsible for the vision of the campus. This vision is simple: to be the premier provider of engineering education in the region, a significant contributor to knowledge internationally and an essential resource to the State of Qatar.

César O. Malavé
Dean

Ioannis G. Economou
Associate Dean for Academic Affairs

Hassan S. Bazzi
Associate Dean for Research and Executive Director of Development,
Engagement, and Outreach

Hazem Nounou
Assistant Dean for Academic and Student Services

Rosalie Nickles
Assistant Dean for Finance and Administrative Services

Texas A&M University at Qatar Graduate Program Executive Director

Patrick Linke
Executive Director of Graduate Studies

General Statement

The Texas A&M branch campus in Qatar, part of the 2,500-acre multi-institutional campus known as “Education City,” offers three graduate degrees in chemical engineering. Texas A&M’s engineering program is widely considered among the best in America, and the curricula offered at the Qatar campus are materially the same as those offered at the main campus located in College Station, Texas. Texas A&M University at Qatar is fully funded by the Qatar Foundation for Education, Science, and Community Development and provides a unique opportunity for the University to expand its international presence and to provide educational and research opportunities for faculty and students.

Administrative Structure

Graduate programs at Texas A&M at Qatar, a branch campus, are subject to the administration and oversight of the Texas A&M main campus.

Office of Graduate and Professional Studies (OGAPS)

Located on the main campus, the OGAPS maintains the official record for each graduate student, and in this role serves as the primary administrative body and overarching source of information for graduate education.

Office of Graduate Studies (OGS)

Located on the Qatar campus, OGS is a support resource for all graduate education locally. As a liaison, OGS ensures student and administration adherence to OGAPS and university rules. All activities of graduate students at Texas A&M at Qatar should be coordinated through OGS and the students’ academic programs.

Academic Programs and Departments

Texas A&M main campus academic units are referred to as departments, whereas those on the Qatar campus are referred to as programs.

Departments and programs work more closely together in regard to graduate studies. Rules and requirements of a student's academic programs are identical to those of the corresponding academic departments on the main campus.

Once a graduate student is accepted, OGAPS and OGS assist and facilitate progression toward completion of a graduate degree through maintenance of all official documents. OGAPS interacts directly with the Graduate Council and Graduate Operations Committee to set minimal university guidelines, and all colleges and programs use these as a framework for operation, only setting more stringent standards when needed and appropriate. Clearance for graduation, including final review of theses and dissertations when required, is performed by OGAPS, but the Office of the Registrar in College Station or the Office of Records in Qatar is responsible for issuing all transcripts.

Programs of Study at Texas A&M University at Qatar

Texas A&M University's College of Engineering strives to provide its students with a high-quality education that will prepare them for a wide range of careers at the forefront of the engineering field. The curriculum is designed to accomplish this by closely integrating cutting-edge basic and applied research with innovative classroom instruction. Texas A&M University's engineering programs are routinely ranked among the best in the United States, and graduates are highly sought after to provide leadership and innovative solutions to global challenges.

Our faculty members maintain active research programs in a wide range of areas. In addition, our students participate in numerous co-op and internship programs, which give them the opportunity to apply their knowledge to real problems in a variety of settings.

General Information (p. 1936)

Faculty

Abdalla, Ahmed A, Associate Professor
Texas A&M University at Qatar
PHD, North Carolina State University, 2001

Abdel-Wahab, Ahmed I, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2003

Abu-Rub, Haithem A, Professor
Texas A&M University at Qatar
PHD, Gdansk University of Technology, Poland, 1995

Ahmed, Beena, Assistant Professor
Texas A&M University at Qatar
PHD, University of New South, Wales, Sydney, Australia, 2004

Ahmed, Shehab, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2007

Al-Hashimi, Mohammed, Research Associate Professor
Texas A&M University at Qatar
PHD, Queen Mary Westfield College, University of London, 2007

Al-Mohannadi, Dhabia, Assistant Professor
Texas A&M University at Qatar
PHD, Texas A&M University,, 2019

Al-Rawashdeh, Ma'moun, Assistant Professor
Texas A&M University at Qatar
PHD, Technical University of Eindhoven, Netherlands, 2013

Alnuweiri, Hussein, Professor
Texas A&M University at Qatar
PHD, University of Southern California, 1989

Alyafei, Nayef M, Assistant Professor
Texas A&M University at Qatar
PHD, Imperial College London, United Kingdom, 2015

Amani, Mahmood, Associate Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 1997

Balog Jr, Robert S, Associate Professor
Texas A&M University at Qatar
PHD, University of Illinois, 2006

Bashir, Hassan, Associate Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2008

Bazzi, Hassan S, Professor
Texas A&M University at Qatar
PHD, McGill University, 2003

Belic, Milivoj R, Professor
Texas A&M University at Qatar
PHD, The City University of New York, 1980

Bengali, Ashfaq A, Professor
Texas A&M University at Qatar
PHD, University of Minnesota, 1992

Bickham, Troy O, Professor
Texas A&M University at Qatar
PHD, University of Oxford, 2001

Bouhali, Othmane, Research Professor
Texas A&M University at Qatar
PHD, Universite Libre de Bruxelles, Faculte des Sciences, 1999

Boutros, Joseph J, Professor
Texas A&M University at Qatar
PHD, Telecom Paris Tech (ENST), 1996

Brothers, Edward N, Associate Professor
Texas A&M University at Qatar
PHD, Pennsylvania State University, 1997

Economou, Ioannis, Professor
Texas A&M University at Qatar
PHD, Johns Hopkins University, 1993

El Borgi, Sami, Professor
Texas A&M University at Qatar
PHD, Cornell University, 1993

El-Guindy, Ahmad M, Associate Professor
Texas A&M University at Qatar
PHD, University of Wisconsin - Madison, 2004

Elbashir, Nimir O, Professor
Texas A&M University at Qatar
PHD, Auburn University, 2004

Elbashir, Nimir O, Professor
Texas A&M University at Qatar
PHD, Auburn University, 2004

Elgindi, Ali, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, University of Chicago, 2011

Elgindi, Mohamed B, Instructional Professor
Texas A&M University at Qatar
PHD, Michigan State University, 1987

Elsheikh, Aymen E, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, Indiana University-Bloomington, 2012

Eslami, Zohreh R, Professor
Texas A&M University at Qatar
PHD, University of Illinois at Urbana-Champaign, 1992

Fadlelmula, Mohamed, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, Middle East Technical University, 2012

Ghrayeb, Ali A, Professor
Texas A&M University at Qatar
PHD, University of Arizona, 2000

Gray, Phillip W, Assistant Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2006

Guerillot, Dominique R, Professor
Texas A&M University at Qatar
PHD, Universite De Provence, 1982

Guo, Bing, Assistant Professor
Texas A&M University at Qatar
PHD, Tsinghua University, China, 1998

Hassan, Ibrahim, Professor
Texas A&M University at Qatar
PHD, Manitoba University, 1995

Hillman, Sara K, Assistant Professor
Texas A&M University at Qatar
PHD, Michigan State University, East Lansing, MI, 2011

Hingtgen, Luke, Visiting Lecturer
Texas A&M University at Qatar
PHD, DePaul University, 2019

Hodges, Amy M, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, University of Arkansas, 2012

Huang, Garng M, Professor
Texas A&M University at Qatar
PHD, Washington University in St. Louis, 1980

Huang, Tingwen, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2002

Ji, Jim X, Associate Professor
Texas A&M University at Qatar
PHD, University of Illinois, 2003

Kakosimos, Konstantinos E, Assistant Professor
Texas A&M University at Qatar
PHD, Aristotle University, 2009

Karkoub, Mansour, Professor
Texas A&M University at Qatar
PHD, University of Minnesota, 1994

Krolikowski, Wieslaw Z, Professor
Texas A&M University at Qatar
PHD, Institute of Physics, Polish Academy of Sciences, 1988

Linke, Patrick, Professor
Texas A&M University at Qatar
PHD, University of Manchester Institute of Science and Technology, 2001

Madrahimov, Sherzod T, Assistant Professor
Texas A&M University at Qatar
PHD, University of Illinois, 2012

Malave, Ceasar, Professor
Texas A&M University at Qatar
PHD, University of South Florida, 1987

Mansoor, Bilal, Assistant Professor
Texas A&M University at Qatar
PHD, University of Michigan, 2010

Masad, Eyad A, Professor
Texas A&M University at Qatar
PHD, Washington State University, 1998

Mir, Nordine, Professor
Texas A&M University at Qatar
PHD, University of Rouen, France, 1998

Nha, Hyon Cheol, Professor
Texas A&M University at Qatar
PHD, Seoul National University, 2002

Nounou, Hazem N, Professor
Texas A&M University at Qatar
PHD, Ohio State University, 2000

Nounou, Mohamed N, Professor
Texas A&M University at Qatar
PHD, Ohio State University, 2000

Panchang, Vijaykumar G, Professor
Texas A&M University at Qatar
PHD, University of Maine, 1985

Parsaei, Hamid R, Professor
Texas A&M University at Qatar
PHD, University of Texas Arlington, 1984

Qaraqe, Khalid A, Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 1997

Rahman, Mohammad A, Assistant Professor
Texas A&M University at Qatar
PHD, University of Alberta, 2010

Retnanto, Albertus, Professor of the Practice
Texas A&M University at Qatar
PHD, Texas A&M University, 1998

Rogers, James R, Associate Professor
Texas A&M University at Qatar
PHD, The University of Iowa, 1994

Rudd, Leeann M, Instructional Associate Professor
Texas A&M University at Qatar
PHD, Indiana State University, 2012

Ruimi, Annie, Associate Professor
Texas A&M University at Qatar
PHD, University of California at Santa Barbara, 2005

Sadr, Reza, Associate Professor
Texas A&M University at Qatar
PHD, University of Utah, 2002

Salama, Ghada H, Instructional Associate Professor
Texas A&M University at Qatar
PHD, Cairo University, 2001

Schuller, Michael J, Instructional Associate Professor
Texas A&M University at Qatar
DEN, Texas A&M University, 1985

Seers, Thomas D, Assistant Professor
Texas A&M University at Qatar
PHD, University of Manchester, 2016

Serpedin, Erchin, Professor
Texas A&M University at Qatar
PHD, University of Virginia, 1999

Srinivasa, Arun, Professor
Texas A&M University at Qatar
PHD, University of California, Berkeley, 1991

Tafreshi, Reza, Associate Professor
Texas A&M University at Qatar
PHD, University of British Columbia, Canada, 2005

Telafici, Michael A, Instructional Associate Professor
Texas A&M University at Qatar
PHD, Norwich University, 2009

Tzortzakis, Stylianos, Professor
Texas A&M University at Qatar
PHD, Ecole Polytechnique, France, 2001

Van De Logt, Martinus J, Associate Professor
Texas A&M University at Qatar
PHD, Oklahoma State University, 2002

Vechot, Luc N, Associate Professor
Texas A&M University at Qatar
PHD, Ecole Nationale Supérieure des Mines de Saint Etienne, France, 2007

Wang, Yuhe, Assistant Professor
Texas A&M University at Qatar
PHD, Texas A&M University, 2013

Weston, Anthony, Instructional Professor
Texas A&M University at Qatar
PHD, Kent State University, 1993

Zilany, Muhammad Shamsul Arefeen, Instructional Assistant Professor
Texas A&M University at Qatar
PHD, McMaster University, 2007

Programs

- Master of Science in Chemical Engineering (p. 1944)
- Master of Engineering in Chemical Engineering (p. 1942)
- Doctor of Philosophy in Chemical Engineering

General Information

General Information

Admission

For admissions information, please refer to the Admissions (p. 31) section and the college specific information for Qatar Admissions (p. 42) in this catalog.

Tuition and Fees

For tuition and fee information, please refer to the Tuition and Fees (p. 1488) section of this catalog.

Transcripts

Students and former students may request an official transcript by completing the transcript request form online at www.qatar.tamu.edu/students/office-of-records or in person at the Office of Records located on the first floor of the Engineering Building in Education City, Doha, Qatar.

Academic Expectations and General Degree Requirements

- Academic Expectations (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/academic-expectations>)
- Degree Requirements (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/degree-requirements>)
- Registration and Academic Status (<http://catalog.tamu.edu/graduate/academic-expectations-general-degree-requirements/registration-academic-status>)

Graduation Application, Diploma and Commencement

Formal application for degrees at Texas A&M University at Qatar is a two-step process. An application must be submitted online by the deadline stated in the academic calendar and degree application. In addition, the supplemental application must be submitted by the deadline. Under

unusual circumstances, an application for a degree may be accepted after the stated deadline. The student must apply via the Howdy portal.

All students must have settled all financial obligations to the university and Qatar Foundation prior to receiving a diploma.

Graduate and undergraduate students completing their degree in July or December will have the opportunity to participate in the commencement ceremony in May, following the completion of their degree. Students must participate in the commencement ceremony of their home campus.

Academic Calendar

Texas A&M University at Qatar Calendar

All dates are subject to change.

Fall Semester 2019*

| | |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| August 20-22 | AGGIE LIFE 101 (required for all new students) |
| August 26 | First day of Fall classes. |
| | First day to apply for December graduation |
| September 1 | Last day for adding/dropping courses with no record for the fall semester, 4:30 p.m. |
| September 10 | Official census date (12th class day) |
| | Last day to change or add Major/Minor for fall, 4:30 p.m. |
| September 26 | Last day to apply for December graduation, 4:30 p.m. |
| September 30 | Undergraduate degree plan approval deadline |
| October 13-17 | Fall Break (No classes. Offices remain open) |
| October 24 | Mid-semester grades due by noon, Office of Records |
| November 18 | Bonfire 1999 Remembrance Day |
| November 24 | Last day for all students to drop courses with no academic penalty (Q-drop), 4:30 p.m. |
| | Last day to officially withdraw from the University, 4:30 p.m. |
| December 8 | Last day of fall semester classes |
| | Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes. |
| December 9 | Reading day (no classes or finals) |
| December 10-12, December 15 | Fall semester final examinations for all students |
| December 16 | Final grades due for all students by 6:00pm, Office of Records |
| December 18 | Qatar National Day (offices closed) |
| December 19 | Semester break (offices closed)* |
| December 22-26 | Semester break (offices closed)* |

*All dates are subject to change.

*Dates for the Eid holidays are subject to change; however, the University will be closed for a three-day period during each Eid.

Spring Semester 2020*

| | |
|-------------|---------------------------------------|
| December 29 | Offices reopen after semester break |
| January 12 | First day of spring classes |
| | First day to apply for May graduation |

| | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| January 16 | Last day for adding/dropping courses with no record for the spring semester, 4:30 p.m. |
| January 27 | Official census date (12th class day) |
| | Last day to change or add Major/Minor for spring, 4:30p.m. |
| February 11 | Qatar National Sports Day (offices closed/no classes) |
| February 13 | Last day to apply for May graduation, 4:30 p.m. |
| March 1-5 | Spring break (no classes) |
| March 8 | Spring semester classes resume |
| March 12 | Mid-semester grades due by noon, Office of Records |
| April 12 | Last day for all students to drop courses with no academic penalty (Q-drop), 4:30 p.m. |
| | Last day to officially withdraw from the University, 4:30 p.m. |
| April 21 | Aggie Muster |
| April 23 | Projected first day of Ramadan* |
| April 26 | Last day of spring semester classes |
| | Redefined Day – Tuesday classes to be held |
| | Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), no regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes |
| April 27-28 | Reading day (no classes or finals) |
| April 29-30 | Spring semester final examinations |
| May 3-4 | Spring semester final examinations |
| May 5 | Qatar Foundation Convocation* |
| May 5 | Final grades due for degree candidates by 6:00p.m., Office of Records |
| May 7 | Commencement Ceremony |
| May 8 | Final grades due for all non-degree candidates by noon, Office of Records |

* All dates are subject to change.

Summer Semester 2020*

| | |
|------------|----------------------------------------------------------------------------------------|
| May 23 | Projected first day of Eid Al-Fitr** |
| May 24-26 | Eid Al-Fitr (offices expected to be closed)** |
| May 31 | First day of summer classes |
| | First day to apply for summer graduation |
| June 3 | Official census date (4th class day) |
| | Last day for adding/dropping courses with no record for the summer semester, 4:30 p.m. |
| June 18 | Last day to apply for summer graduation, 4:30 p.m. |
| July 2 | Last day for all students to drop courses with no academic penalty (Q-drop), 4:30 p.m. |
| | Last day to officially withdraw from the University, 4:30 p.m. |
| July 4 | United States Independence Day |
| July 16 | Last day of Summer classes |
| July 19-20 | Final examinations for Summer term |
| July 22 | Final grades due for summer term by noon, Office of Records |

*All dates are subject to change.

^aDates for the Eid holidays are subject to change; however, the University will be closed for a three-day period during each Eid.

Services

Services for Texas A&M University at Qatar Students

Academic Advising (p. 1938)

The Association of Former Students (p. 1938)

Campus Safety and Security (p. 1938)

Career Services (p. 1938)

Critical Incident Response Team (p. 1938)

Disability Services (p. 1938)

Global Educational Opportunities (p. 1939)

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Student Wellness and Counseling (p. 1939)

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On-Campus Housing (p. 1940)

Academic Advising

The primary purpose of academic advising at Texas A&M at Qatar is to assist students in the development of meaningful educational plans that are compatible with their personal abilities and goals. The ultimate responsibility for making decisions about personal goals and educational plans rests with the individual student.

Your first semester, you will need to meet with your faculty advisor to determine what courses you would like to take as there will be prescribed set of courses you'll need to start with.

More information can be found at <https://www.qatar.tamu.edu/graduate-studies>.

The Association of Former Students

www.AggieNetwork.com (<http://www.AggieNetwork.com>)

- Aggie Ring.
- Alumni Services, Giving and Events.
- Traveling Aggies.

Campus Safety and Security

- In an emergency situation dial 4454.0999 from within Education City or 999 from outside Education City.
- Report incidents immediately to Texas A&M University at Qatar security (333 from a Texas A&M Engineering Building phone or +974.4423.0333 from a mobile or outside phone).

Information on campus safety and security; as well as the Annual Security Report is located here (<https://www.qatar.tamu.edu/other/safety-and-security>).

Career Services

The Career Services Office offers advising and assistance to students seeking internships and full-time employment, while supporting the recruiting initiatives of local and international companies. Career Services assists students as they prepare for their job searches by coordinating informational sessions and workshops on topics such as resume writing, interviewing skills and career readiness. The office also hosts two annual recruiting events, the Career Networking Event at Texas A&M at Qatar and the spring career fair in collaboration with all Education City universities. A variety of guest speakers from industry are hosted each year. Students learn about opportunities in specific companies and on general issues related to the workplace. The Career Services Office provides students with other opportunities for industry engagement ranging from corporate competitions to participation in local and regional conferences.

More information can be found at <https://www.qatar.tamu.edu/students/career-services>

Critical Incident Response Team

The purpose of the Critical Incident Response Team (CIRT) is to respond to incidents involving Texas A&M at Qatar students and to serve as the university contact when students are involved in incidents away from the campus.

Texas A&M at Qatar is committed to providing an educational climate that is conducive to the personal and professional development of each individual. Even with a small university community, Texas A&M at Qatar and the Department of Student Affairs realize that crises, or critical incidents, will occur and that these crises can have a significant effect on the entire university, Education City and local communities. Such critical incidents require an effective and timely response. The Department of Student Affairs has developed CIRT consisting of Texas A&M at Qatar staff to best respond to these critical student incidents. CIRT can be reached at (+974) 4423-0333.

The goals of CIRT are as follows:

- To coordinate the university's response to critical incidents involving students while paying special attention to the safety and security needs of members of the university community.
- To offer counseling, guidance and appropriate support to members of the university community, their families and university caregivers.
- To use critical incidents, when appropriate, as teachable moments that may enhance the quality of life for all those touched by critical incidents.

Disability Services

The mission of Disability Services is to ensure accessibility for all students to University programs. The Department of Student Affairs Counseling and Wellness Program administers Disability Services at Texas A&M University at Qatar. Disability Services, with the assistance of Disability Services at Texas A&M University, offers accommodations counseling, evaluation referral, disability-related information, and adaptive technology counseling and equipment for academically related purposes. Although Disability Services does not offer disability evaluation and/or testing, tutoring, personal expenses, attendants or scholarships, we will provide referral information.

More information can be found at <https://www.qatar.tamu.edu/students/student-affairs/disability-services>

Global Educational Opportunities

Higher education is not immune to the trend of globalization. To adapt to this phenomenon and prepare graduates for an increasingly interdependent global community, Texas A&M University at Qatar is committed to providing global learning opportunities for all students. Whether it be study abroad programs, service-learning trips, research abroad, language training, international conferences or workshops, or global leadership programs, students at Texas A&M University at Qatar can choose from a variety of experiences that can increase their cultural competence, expand their global worldview, and augment their marketability in a rapidly globalizing world.

Please visit <http://catalog.tamu.edu/graduate/international-opportunities-students/> for more information.

Information Technology

The mission of the Information Technology (IT) department is to provide a robust, secure and innovative environment that supports Texas A&M University at Qatar's goals in teaching and lifelong learning, research, and engagement. IT strives to embody and uphold Texas A&M's tradition of organizational excellence. The department is comprised of five groups that provide over 75 services to faculty, staff and students.

Educational Technology

The Educational Technology group serves faculty and students by promoting and assisting in the use of technology for instruction. Providing systems such as eCampus and Echo360 Lecture Capture, the group also manages classroom technologies and academic software including audiovisual systems.

Enterprise Applications

The Enterprise Applications (EA) group performs business process analysis and develops, administers, and maintains automation to achieve greater efficiencies. EA oversees all electronic communication with the Texas-based administrative systems for student information, financial accounting and payroll, including troubleshooting the processes, applications, and data feeds employed and ensuring secure operation. EA also provides support for many of the university's web resources, including Marhaba, the intranet portal.

Network and Security

The Network and Security group provides and manages the network, telecommunications and security infrastructure of the branch campus. The group ensures compliance with all laws, policies, procedures, guidelines and industry best practices for operating and securing the Texas A&M at Qatar network. The group strives to increase community awareness regarding cyber-security, prevent cyber-attacks, and remediate the effects of viruses, worms, spyware and other malware.

Service Desk

The Service Desk provides a single point of contact for all IT-related queries, service requests and communications. The team provides user orientation and training. The Service Desk proactively communicates information regarding IT services, updates and policies.

Systems Engineering

The Systems Engineering group is responsible for providing computing infrastructure and services. This team maintains and

supports mission-critical systems including physical and virtual infrastructure, directory and authentication services, file and database services, e-mail services, data backups and disaster recovery, data center monitoring, desktop and server security, and print services.

The Texas A&M Qatar Campus Library

The Texas A&M Qatar Campus Library supports the teaching, research and outreach missions of the university in an environment that fosters learning and inquiry. A core professional collection of over 7,000 titles is complemented by a basic collection in the arts and humanities of around 3,000 volumes. Students may also request books and journal articles from the five libraries on the main campus, where there is a print collection of around 5 million volumes.

Extensive online resources are available to students both within the library and on desktop or mobile devices via remote access. This includes more than 100,000 electronic journals and newspaper titles, over 1,000 databases, and more than 1.3 million electronic books.

Students can locate books and thousands of journals by author, title, subject and keyword using the basic online catalog, LibCat, at libcat.tamu.edu. Alternately, they can use the time-saving multi-search tool Quick Search, which allows searching of multiple databases at one time.

An experienced librarian is also available Texas hours via online chat, which is a great way to get help when starting a research project. GetItForMe is a document delivery service that supplies print books or electronic copies of journal articles and book chapters free of charge to all students. Print books borrowed from the main campus generally arrive in five to 10 working days. Electronic copy is usually emailed within two working days. Material not available from the main campus libraries can often be obtained either from other libraries in Qatar or around the world. Professional librarians are also available on campus to teach individuals and groups how to use library tools and resources.

More information can be found at library.qatar.tamu.edu.

Student Wellness and Counseling

The Student Wellness and Counseling Programs promote the process of developing a healthy lifestyle. By participating in awareness activities, educational programs and counseling, Aggies can enhance their personal wellness with improved physical health, emotional stability, supportive relationships, spiritual growth and academic/career satisfaction. Services for students in the Wellness Program include academic skills counseling and testing, career counseling and testing, personal counseling, stress management and biofeedback, outreach programming, crisis and consultation, and disability services.

More information can be found at <https://www.qatar.tamu.edu/students/student-affairs/health-and-wellness/>

Ombudsperson

The Ombuds Officer for graduate education serves as an informal, neutral and confidential resource for graduate and professional students to discuss questions and concerns related to their graduate experience. The university is a large and complex institution and graduate and professional students often play multiple roles (e.g., student, research collaborator, teacher, technician, peer). Misunderstandings and conflicts can arise in any one of these roles. Having a safe, off-the-record conversation with an Ombuds Officer can be a first step if you do not

know where to turn. The Ombuds Officer is here to help graduate and professional students identify options for addressing concerns and will promote a fair and impartial process for all parties involved.

The Graduate and Professional Student Ombuds Officer is guided and informed by the Code of Ethics and Standards of Practice of the International Ombudsman Association.

The Ombuds Officer can:

- Listen and help you achieve a greater understanding of the problem.
- Help you find information applicable to your situation and identify possible solutions to your problem.
- Explain University policies and procedures and how they apply to your specific case.
- Help you identify options for resolving conflicts with colleagues, staff, faculty, and advisors.
- Help you achieve fair and equitable solutions to problems.
- Facilitate communication among people in conflict.
- Provide other types of assistance to help you resolve a problem informally.
- Refer you to formal grievance or appeal procedures if you wish to engage in a formal process.

Contact information for Ombuds Services:

Office of Graduate and Professional Studies

ombuds@tamu.edu

<http://ogaps.tamu.edu/>

On-Campus Housing

Student housing in Education City is available to students enrolled full time at Texas A&M at Qatar on a first-come, first-served basis. Preference is given to those students who do not live in Qatar. In order to apply for student housing, students must complete a housing request through the Department of Student Affairs. In order to consider the application complete, students must also submit a refundable damage deposit of QAR 2,000.

Applications received without the deposit will be returned. Prior to receiving access to their assigned room each semester, students are required to pay the balance of their housing fees for the upcoming semester.

There are separate residence halls for male and female students. In addition, students have access to a communal lounge with computers, printers, cable television, DVDs, and video in each residential area. Laundry facilities with washers and dryers are available. Wireless Internet is available throughout the residence halls.

A Qatar Foundation Housing and Residence Life professional (residence hall directors [RHDs]) and student staff (community development advisors [CDAs]) work closely with student residents to maintain a safe, comfortable and healthy living-learning environment.

The RHD is a full-time professional staff member available to help students with life transitions associated with living in a community residential environment and the transition to college. The RHDs are responsible for the supervision of student staff members known as CDAs. CDAs are student leaders who have been selected because of their maturity and knowledge of the Education City community. They are a resource available to the students in the residence halls, and their

primary focus is to facilitate the development of a strong living-learning community in the halls.

For more information about student housing, please send an email to housing@qf.org.qa, and a Qatar Foundation Student Affairs professional will be in touch to answer any questions.

Facilities

Texas A&M University at Qatar Facilities

The Texas A&M University at Qatar engineering building is one of the most advanced facilities for engineering education in the world. Designed by the famous father-son Mexican architect team Legoretta + Legoretta, the 55,000 square meter (592,000 square feet) facility combines modernist elements with traditional Islamic architectural motifs. The building is fully wireless and features high-tech classrooms, teaching laboratories and computer laboratories. The research rotunda provides additional research laboratories that give future Aggie engineers firsthand experience.

Texas A&M Qatar campus's home in Education City also includes a library with a core professional collection of 10,000 titles and a number of journals and DVDs relating to the liberal arts, humanities, and basic sciences. Students also have access to books and journals from the libraries on the main campus, from collections that exceed 5 million volumes. Extensive online resources are available to students in the library and remotely, including more than 2 million electronic books and thousands of subscription electronic journals and databases.

Policies

University Statement for Individuals with Disabilities (p. 1940)

University Statement on Harassment and Discrimination (p. 1941)

Aggie Honor Code (p. 1941)

University Student Rules (p. 1942)

University Statement for Individuals with Disabilities

Texas A&M University (TAMU) is committed to maintaining an accessible campus community and providing reasonable accommodations to qualified students, faculty, staff and visitors, including making its web sites accessible and usable. TAMU does not discriminate on the basis of an individual's disability and complies with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) as amended.

Students are protected from discrimination regarding access to and participation in TAMU's programs and activities. TAMU provides academic adjustments and auxiliary aides to accommodate needs of students with disabilities, as defined under the law, who are otherwise qualified to meet the institution's academic requirements.

Students with disabilities who would like to request accommodations may contact the following:

- TAMU, Texas A&M University Health Science Center's (TAMHSC) College of Nursing, Irma Lerma Rangel College of Pharmacy College Station, College of Medicine, and School of Public Health should contact Disability Services (979) 845-1637 or disability@tamu.edu.

- TAMHSC College of Dentistry should contact the Office of Academic Affairs (214) 828-8207 to request accommodations.
- TAMU School of Law should contact the Office of Student Affairs at (817) 212-4111 to request accommodations.
- TAMHSC Irma Lerma Rangel College of Pharmacy in Kingsville should contact the Disability Resource Center at TAMU at Kingsville at (361) 593-3024 to request accommodations.
- TAMU at Galveston (TAMUG) should contact Counseling and Career Services at (409) 740-4736 or studentservices@tamug.edu.
- TAMU at Qatar (TAMUQ) should contact the campus psychologist, Dr. Steve Wilson +974-4423-0047 or stephen.wilson@qatar.tamu.edu.

Students with a disability who believe they have experienced discrimination may contact Kevin McGinnis, Chief Risk, Ethics, and Compliance Officer, at the J. K. Williams Building, Suite 302, College Station, TX 77843, civilrights@tamu.edu, or at (979) 458-0308. Students can also contact the TAMU ADA Coordinator at ADA.Coordinator@tamu.edu or (979) 845-8115, or any of the following campus contacts:

- TAMU, TAMU School of Law, and TAMHSC locations should contact the ADA Coordinator at (979) 845-8115 or ADA.Coordinator@tamu.edu.
- TAMUG should contact the ADA Coordinator at (409) 740-4503 or boyerj@tamug.edu.
- TAMUQ should contact Miguel Trevino at +974-4423-0317 or miguel.trevino@qatar.tamu.edu.

For more information about disability accommodations, see TAMU Student Rule 46, [Disability Accommodations in Academic Programs](http://student-rules.tamu.edu/rule46) (<http://student-rules.tamu.edu/rule46>) or TAMUG Student Rule 46, [Disability Accommodations in Academic Programs](http://www.tamug.edu/studentrules/Academic_Programs) (http://www.tamug.edu/studentrules/Academic_Programs) (http://www.tamug.edu/studentrules/Student_Grievance_Procedures/46_Disability_Accommodations.html).

University Statement on Harassment and Discrimination

Texas A&M University is committed to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community. The University provides equal opportunity to all employees, students, applicants for employment or admission, and the public regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or gender identity. Texas A&M University will promptly investigate and resolve all complaints of discrimination, harassment (including sexual harassment), and related retaliation in accordance with applicable federal and state laws.

The University's response to allegations of discrimination, harassment, and related retaliation will be 1) prompt and equitable; 2) intended to prevent the recurrence of any discrimination, harassment or retaliation; and 3) intended to remedy its discriminatory effects, as appropriate. A substantiated allegation of such conduct will result in disciplinary action, up to and including separation from the University. The University's sanctioning guidance for substantiated allegations of discrimination on the basis of sex, including sexual harassment, sexual violence and related retaliation, can be found here: Title IX Cumulative Sanctioning Matrix (<https://urc.tamu.edu/media/1601574/title-ix-sanctioning-matrices-august-2018.pdf>).

Students who have questions or believe they have experienced discrimination, harassment, sexual violence, and/or related retaliation are encouraged to contact Kevin McGinnis, Chief Risk, Ethics, and Compliance Officer, at the J. K. Williams Building, Suite 302, College Station, TX 77843. He may be contacted at civilrights@tamu.edu or at (979) 458-0308.

In addition, any report can be submitted to Jennifer Smith, Title IX Officer, at the Medical Sciences Library, Suite 007, College Station, TX 77843. Her telephone number is: (979) 458- 8167 and email address is civilrights@tamu.edu. Such reports will be immediately forwarded to the Chief Risk, Ethics, and Compliance Officer for investigation and resolution. The Title IX website can be found at <http://urc.tamu.edu/title-ix/>.

To report incidents, request accommodations, or inquire about discrimination based on disability, you may contact Peggy Zapalac, ADA Coordinator, at (979) 845-8115 or ADA.Coordinator@tamu.edu. The office address is 750 Agronomy Road, Suite 2101, College Station, TX 77843 or see the ADA Website at <https://urc.tamu.edu/ada>. Reported incidents will be immediately forwarded to the Chief Risk, Ethics, and Compliance Officer for investigation and resolution.

Aggie Honor Code

Integrity is a fundamental core value of Texas A&M University at Qatar. Academic integrity requires a commitment by all faculty, students, and administrators to:

- Remain constantly focused on the quality of the academic programs;
- Achieve and maintain academic excellence in all courses and programs to assure the value of Texas A&M University at Qatar degrees;
- Demand high academic standards from all members of the Aggie community.

All Texas A&M University at Qatar students, graduate and undergraduate, part-time or full-time, in residence or in distance education, are expected to follow the guiding rule of the Aggie Honor Code:

"An Aggie does not lie, cheat, or steal or tolerate those who do."

Upon accepting admission to Texas A&M University at Qatar, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System, which may be found at <https://aggiehonor.tamu.edu/>. A student will be required to state his/her commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M community from the requirements or the process of the Honor System.

In addition to adherence to the Honor Code, a student (graduate students in particular) who is completing a thesis, record of study, dissertation, and publication may fall under the additional federal requirements promulgated by the Office of Research Integrity (Scientific Misconduct Regulations – 42 CFR part 50), as well as Texas A&M System Regulations and Texas A&M University Rules (Texas A&M System Regulations – Ethics in Research and Scholarship – 15.99.03, and Texas A&M University rules and standard administrative procedures – Responsible Conduct in Research and Scholarship – 15.99.03.M1, 15.99.03.M1.01-06).

University Student Rules

Each student enrolled at Texas A&M University is responsible for being fully acquainted with and complying with the Texas A&M University Student Rules. Specific rules, information and procedures may be found in publications pertaining to each particular service or department. Students are encouraged to reference the website at <http://student-rules.tamu.edu> for current published rules and regulations.

For information concerning federal and state policies, please reference the appendices (p. 1955) in this catalog.

Qatar Engineering Programs

Chemical Engineering Program

Texas A&M University at Qatar offers three graduate degrees: Doctor of Philosophy (PhD), Master of Science (MS), and Master of Engineering (MEng). The PhD and MS degree programs include a significant research component in addition to graduate coursework. Information about the graduate programs at TAMUQ and specific program requirements is available upon request and at <https://www.qatar.tamu.edu/graduate-studies>.

Some research areas available within the program include: process safety, water and environmental management, desalination, gas-to-liquid conversion, applied catalysis, design and simulation of chemical reactors, energy efficiency, process integration and optimization, oil and gas processing, nonlinear modeling, and process dynamics and control. Modern equipment and computational tools are available in numerous laboratories to perform research in these and other areas.

Masters

- Master of Science in Chemical Engineering (p. 1944)
- Master of Engineering in Chemical Engineering (p. 1942)

Doctoral

- Doctor of Philosophy in Chemical Engineering

Master of Engineering in Chemical Engineering

A student holding a Bachelor of Science degree in engineering or a qualified senior during the last semester may apply for admission to graduate studies to work toward the non-thesis degree of **Master of Engineering (MENG)**, majoring in his or her particular field of engineering.

The work in the major field will include one or two written reports (not necessarily involving results of research conducted by the candidate).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1942)
- Degree Plan (p. 1943)
- Credit Requirement (p. 1943)
- Transfer of Credit (p. 1943)

- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1943)
- Final Examination (p. 1943)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of the department or the department head's designee (e.g., departmental graduate advisor) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the Master of Engineering will consist of at least one member of the graduate faculty. Typically this member may be the departmental graduate advisor and will serve as the student's committee chair or, the departmental graduate advisor may appoint/approve another departmental faculty member to serve as the appropriate chair of the student's advisory committee. Depending on the departmental policy, additional committee members may be required. If additional committee members are deemed necessary by the department, the chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's degree program, has the responsibility for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship or professional paper and is registered for courses such as 684, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, any professional study or project, and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members

may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college, and no later than 90 days prior to the date of the final oral examination. No exceptions are allowed.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Exemption from Final Examination is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed above upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater **might** be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the preceding section apply. Coursework **in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward

meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. A zero credit 684 and 685 course is only allowed for non-thesis master's students. Other courses, including 691 research hours, are not eligible for zero credit.
4. Any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan:
 - A maximum of 6 hours of 684 (Professional Internship) and/or
 - A maximum of 6 hours of 685 (Directed Studies), and
 - Up to 3 hours of 690 (Theory of Research), and
 - Up to 3 hours of 695 (Frontiers in Research).
5. A maximum of 2 hours of Seminar (681).
6. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
7. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
8. No credit hours of 691 (Research) may be used.
9. Continuing education courses may not be used for graduate credit.
10. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Final Examination

The candidate must pass a final examination by dates announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" unless the student has been exempted from the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellation.** The candidate is eligible to petition for an exemption from the final examination with departmental or chair of intercollegiate faculty, if applicable, and committee approval. The approved petition should be submitted to the Office of Graduate and Professional Studies by the deadline announced for the student's final semester (or semester of graduation) in the Office of Graduate and Professional Studies Calendar. Please see the Office of Graduate and Professional Studies website at <http://ogaps.tamu.edu>.

To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and no unabsolved grades of D, F or U can occur for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is registered. Additionally, all English language proficiency requirements must be satisfied prior to scheduling the examination.

A request to hold and announce the final examination **must be** submitted to the Office of Graduate and Professional Studies a **minimum of 10 working days in advance** of the scheduled date for the examination. Examinations which are not completed and reported as satisfactory to the Office of Graduate and Professional Studies within 10 working days of the scheduled examination date will be recorded as failures. A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded). The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled.

The final examination covers all work taken on the degree plan and at the option of the committee may be written or oral or both. The examination is conducted by the student's advisory committee as finally constituted. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

Additional Requirements

Additional Requirements

- Residence (p. 1944)
- Time Limit (p. 1944)
- Foreign Languages (p. 1944)
- Internship or Practicum (p. 1944)
- Application for Degree (p. 1944)

Residence

No residence requirement exists; however, attention is directed to the rules regarding Limitations on the Use of Transfer, Extension and Certain Other Courses.

See Residence Requirements (p. 21).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

Foreign Languages

No specific language requirement exists for the Master of Engineering degree.

Internship or Practicum

The final examination is not to be administered until all other requirements for the degree, including any internship, have been substantially completed.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Master of Science in Chemical Engineering

The **Master of Science (MS)** curriculum is designed to develop new understanding through research and creativity. Students have the option to pursue a thesis or non-thesis Master of Science degree.

Steps to Fulfill Master's Degree Requirements

| | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Meet with departmental graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor or chair of the intercollegiate faculty. |
| 2 | Establish advisory committee. Submit a degree plan. ¹ | When: Prior to the deadline imposed by the student's college and no later than 90 days prior to final oral or thesis defense. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and Office of Graduate and Professional Studies (OGAPS). |
| 3 | If thesis is required, submit thesis research proposal and research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, Research Compliance and Biosafety, and OGAPS. |

| | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Apply for degree ² ; pay graduation fee. | When: During the first week of the final semester, see OGAPS calendar. |
| 5 | Check to be sure degree program and advisory committee are up-to-date, and coursework is complete. | When: Well before submitting request to schedule final examination. |
| 6 | Complete residence requirement. | When: If applicable, before or during final semester. Approved by: OGAPS. |
| 7 | Submit request to schedule final examination. | When: Must be received by OGAPS at least 10 working days before exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. |
| 8 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS. |
| 9 | If required, upload one approved final copy of thesis as a single PDF file to etd.tamu.edu and submit the fully signed thesis approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or chair of the intercollegiate faculty and OGAPS. |
| 10 | Graduation; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |

¹ The online Document Processing Submission System is located on the website <https://ogsdps.tamu.edu>.

² Complete the application for degree form via the student's Howdy portal.

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1945)
- Degree Plan (p. 1946)
- Credit Requirements (p. 1946)
- Transfer of Credit (p. 1946)
- Limitations on the Use of Transfer, Extension and Certain Other Courses (p. 1946)

- Thesis Option (p. 1946)
 - Thesis Proposal (p. 1947)
 - Final Examination/Thesis Defense (p. 1947)
- Non-Thesis Option (p. 1947)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling for coursework, the student will consult with the head of his or her major or administrative department (or intercollegiate faculty, if applicable) concerning appointment of the chair of his or her advisory committee. The student's advisory committee for the MS degree will consist of **no fewer than three members of the graduate faculty**, representative of the student's fields of study and research. The chair or the co-chair of the advisory committee must be from the student's major department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department**. The outside member for students in an interdisciplinary program must have an appointment to a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. The student will interview each prospective committee member to determine whether he or she is willing to serve. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other graduate faculty members located off campus may serve as a member or co-chair (but not chair) with a member as the chair. The chair of the committee, who usually has immediate supervision of the student's research and thesis, has the responsibility for calling required meetings of the committee and for calling meetings at any other time considered desirable.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

If the chair of the student's advisory committee is unavailable for an extended time in any academic period during which the student is involved in activities relating to an internship, thesis or professional paper, and is registered for courses such as 684, 691, 692 or 693, the student may request, in writing, that the department head appoint an alternate advisory committee chair during the interim period.

The duties of the committee include responsibility for the proposed degree plan, the research proposal, the thesis and the final examination. In addition, the committee as a group and as individual members are responsible for advising the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

The committee members' approval on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign *en masse*.

Degree Plan

The student's advisory committee, in consultation with the student, will develop the proposed degree plan. **The degree plan must be completed and filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college or interdisciplinary degree program, if applicable, and no later than 90 days prior to the date of the final oral examination or thesis defense.**

A student should submit the degree plan using the online Document Processing Submission System located on the website <https://ogsdps.tamu.edu>.

A student submitting a proposed degree plan for a Master of Science degree should designate on the official degree plan the appropriate program option.

Additional coursework may be added to the approved degree plan by petition if it is deemed necessary by the advisory committee to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination or Request for Final Examination Exemption is approved by the Office of Graduate and Professional Studies.

Credit Requirement

A minimum of 32 semester credit hours of approved courses and research is required for the thesis option Master of Science degree. A minimum of 36 semester credit hours of approved coursework is required for the Non-Thesis Option.

Ordinarily the student will devote the major portion of his or her time to work in one or two closely related fields. Other work will be in supporting fields of interest.

Transfer of Credit

A student who has earned 12 hours of graduate credit in residence at Texas A&M University may be authorized to transfer courses in excess of the limits prescribed below upon the advice of the advisory committee and with the approval of the Office of Graduate and Professional Studies. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater may be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Otherwise, the limitations stated in the following section apply. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Courses appearing on the degree plan with grades of D, F or U may not be absolved by transfer work. Credit for thesis research or the equivalent is not transferable. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours or equated to semester credit hours. An official transcript from the university at which the transfer coursework was taken must be sent directly to the Office of Admissions.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR.

Limitations on the Use of Transfer, Extension and Certain Other Courses

Some departments may have more restrictive requirements for transfer work. If otherwise acceptable, certain courses may be used toward meeting credit-hour requirements for the master's degree under the following limitations.

1. The maximum number of credit hours which may be considered for transfer credit is the greater of 12 hours or one-third (1/3) of the total hours of a degree plan. The following restrictions apply:
 - Graduate and/or upper-level undergraduate courses taken in residence at an accredited U.S. institution, or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the student was in degree-seeking status at Texas A&M University, or the student was in degree-seeking status at the institution at which the courses were taken; and if the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution.
 - Courses previously used for another degree are not acceptable for degree plan credit.
2. The maximum number of credit hours taken in post-baccalaureate non-degree (G6) classification at Texas A&M University which may be considered for application to the degree plan is 12.
3. Not more than 12 hours may be used in any combination of the following categories:
 - Not more than 8 hours in the combination of 691 (research), 684 (Professional Internship) or may be used.
 - Not more than 8 hours of 685 (Directed Studies) may be used.
 - Not more than 3 hours of 690 (Theory of Research) may be used.
 - Not more than 3 hours of 695 (Frontiers in Research) may be used.
4. A maximum of 2 hours of Seminar (681).
5. A maximum of 9 hours of advanced undergraduate courses (300- or 400-level).
6. For graduate courses of three weeks' duration or less, taken at other institutions, up to 1 hour of credit may be obtained for each five-day week of coursework. Each week of coursework must include at least 15 contact hours.
7. Continuing education courses may not be used for graduate credit.
8. Extension courses are not acceptable for credit.

Exceptions will be permitted only in unusual cases and when petitioned by the student's advisory committee and approved by the Office of Graduate and Professional Studies.

Thesis Option

An acceptable thesis is required for the Master of Science degree for a student who selects the thesis option program. The finished work

must reflect a comprehensive understanding of the pertinent literature and express in clear English, the problem(s) for study, the method, significance and results of the student's original research. Guidelines for the preparation of the thesis are available in the Thesis Manual, which is available online at the Office of Graduate and Professional Studies website.

After successful defense (or exemption) and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if appropriate), the student must submit his/her thesis in electronic format as a single PDF file. The PDF file must be uploaded to the Office of Graduate and Professional Studies website. Additionally, a signed approval form must be brought or mailed to the Office of Graduate and Professional Studies. The PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting the thesis are announced each semester or summer term in the "Office of Graduate and Professional Studies Calendar" (see Time Limit statement). These dates also can be accessed via the Office of Graduate and Professional Studies website.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, theses and dissertations are digitally stored and made available through the Texas A&M Libraries.

A thesis that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head (or chair of the intercollegiate faculty, if applicable). The manuscript must be resubmitted as a new document, and the entire review process must begin again. All original submittal deadlines must be met during the resubmittal process to graduate that semester.

Thesis Proposal

For the thesis option Master of Science degree, the student must prepare a thesis proposal for approval by the advisory committee and the head of the major department or chair of the interdisciplinary faculty, if applicable. This proposal must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the request for the final examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the Office of Research Compliance and Biosafety website.

Final Examination/Thesis Defense

A student must pass a final examination by dates announced each semester or summer term in the Office of Graduate and Professional Studies Calendar. To be eligible to take the final examination, a student's GPR must be **at least 3.000 for courses on the degree plan and for all courses completed at Texas A&M which are eligible to be applied to a graduate degree, and there must be no unabsolved grades of D, F or U for any course listed on the degree plan.** To absolve a deficient grade, the student must repeat the course at Texas A&M University and achieve a grade of C or better. All coursework on the degree plan must have been completed with the exception of those hours for which the student is

registered. For thesis-option students, an approved thesis proposal must be on file in the Office of Graduate and Professional Studies according to published deadlines prior to the final examination or submission of the request for exemption from the final examination.

A request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date for the examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.** A student may be given only one opportunity to repeat the final examination for the master's degree and that must be within a time period that does not extend beyond the end of the next regular semester (summer terms are excluded).

For thesis option students, the final examination covers the thesis and all work taken on the degree plan and at the option of the committee may be written or oral or both. The final examination may not be administered before the thesis is available to all members of the student's advisory committee in substantially final form, and all members have had adequate time to review the document. The examination is conducted by the student's advisory committee as finally constituted. A thesis option student must be registered in the University in the semester or summer term in which the final examination is taken. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the major professor, attend final examinations for advanced degrees. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department, or interdisciplinary degree program, may have a stricter requirement provided there is consistency within all degree programs within a department or interdisciplinary degree program.

The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

A thesis option candidate may petition to be exempt from his/her final examination provided his/her degree plan GPR is 3.500 or greater and he/she has the approval of the advisory committee, the head of the student's major department, or intercollegiate chair, if appropriate, and the Office of Graduate and Professional Studies. It is required that the petition for exemption be submitted the same semester the student intends to submit the thesis.

Non-Thesis Option

For non-thesis option students, a final comprehensive examination may be required.

The final exam cannot be held prior to the mid point of the semester if questions on the exam are based on courses in which the student is currently enrolled. If a student has completed all required degree plan coursework, the student is not required to be registered for classes in the semester the final examination is administered (unless he/she holds an assistantship). For specific final examination requirements, a student

should check the program requirements for the degree which he/she is pursuing.

Exam results must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If an approved committee member substitution (1 only) has been made, his/her signature must also be submitted to the Office of Graduate and Professional Studies.

A student pursuing the non-thesis option is not allowed to enroll in 691 (research) for any reason and 691 may not be used for credit toward a non-thesis option Master of Science degree. A maximum of 4 credit hours of 684 (Professional Internship), 8 credit hours of 685 (Directed Studies), and up to 3 credit hours of 690 (Theory of Research) or 695 (Frontiers in Research) may be used toward the non-thesis option Master of Science degree. In addition, any combination of 684, 685, 690 and 695 may not exceed 25 percent of the total credit hour requirement shown on the individual degree plan. All requirements for the non-thesis option Master of Science degree other than those specified above are the same as for the thesis option degree.

Additional Requirements

Additional Requirements

- Residence (p. 1948)
- Continuous Registration (p. 1948)
- Time Limit (p. 1948)
- Foreign Languages (p. 1948)
- Application for Degree (p. 1948)

Residence

In partial fulfillment of the residence requirement for the degree of Master of Science, the student must complete 9 resident credit hours during one regular semester or one 10-week summer semester in resident study at Texas A&M University. Upon recommendation of the student's advisory committee, department head or Chair of the Interdisciplinary Program, if appropriate, and with approval of the Office of Graduate and Professional Studies, a student may be granted exemption from this requirement. Such a petition, however, must be approved prior to the student's registration for the final 9 credit hours of required coursework.

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies.

See Residence Requirements (p. 21).

Continuous Registration

A student in the thesis option of the Master of Science program who has completed all coursework on his/her degree plan other than 5V98, 5V99, and 691 (research) is required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Time Limit

All degree requirements must be completed within a period of seven consecutive years for the degree to be granted. A course will be

considered valid until seven years after the end of the semester in which it is taken. Graduate credit for coursework which is more than seven calendar years old at the time of the final examination (oral or written) may not be used to satisfy degree requirements.

A student who has chosen the thesis option must have the final corrected version of the thesis cleared by the Office of Graduate and Professional Studies no later than one year after the final examination, or approval of a petition for exemption from the final exam, or within the seven-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Foreign Languages

No specific language requirement exists for the Master of Science degree.

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

Doctor of Philosophy in Chemical Engineering

Overview

Work leading to the degree of **Doctor of Philosophy (PhD)** is designed to give the candidate a thorough and comprehensive knowledge of his or her professional field and training in methods of research. The final basis for granting the degree shall be the candidate's grasp of the subject matter of a broad field of study and a demonstrated ability to do independent research. In addition, the candidate must have acquired the ability to express thoughts clearly and forcefully in both oral and written languages. The degree is not granted solely for the completion of coursework, residence and technical requirements, although these must be met.

For a student who has completed a master's degree, a DDS/DMD, DVM or MD at a U.S. institution, a minimum of 64 hours is required on the degree plan for the degree of Doctor of Philosophy. For a student who has completed a baccalaureate degree but not a master's degree or a U.S. DDS/DMD, DVM or MD, a minimum of 96 hours is required on the degree plan for the degree of Doctor of Philosophy.

Steps to Fulfill Doctoral Degree Requirements

| | | |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 | Meet with departmental/intercollegiate graduate advisor to plan course of study for first semester. | When: Before first semester registration. Approved by: Graduate advisor. |
|---|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|

| | | | | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Establish advisory committee. Submit a degree plan. | When: Prior to the deadline imposed by the student's college or intercollegiate programs, and no later than 90 days prior to preliminary examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies (OGAPS). | 8 | Submit request for permission to hold and announce final examination. | When: Must be received by OGAPS at least 10 working days before requested exam date. See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and OGAPS. |
| 3 | Complete course work detailed on the approved degree plan. | Before preliminary exam. | 9 | Successfully complete final examination. | When: The Report of the Final Examination Form should be submitted to OGAPS within 10 days following the exam. Approved by: Advisory committee and OGAPS |
| 4 | Complete the preliminary examination. | When: See steps for completing the preliminary examination. The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan. Approved by: Advisory committee, department head or chair of the intercollegiate faculty, and OGAPS. | 10 | Upload one approved final copy of the dissertation or record of study as a single pdf file to etd.tamu.edu and submit the fully signed dissertation/record of study approval form to the Office of Graduate and Professional Studies. | When: See OGAPS calendar for deadlines. Approved by: Advisory committee, department head or intercollegiate faculty chair, and Office of Graduate and Professional Studies. |
| 5 | Submit research proposal for dissertation or record of study and the research proposal approval form to the Office of Graduate and Professional Studies. | When: At least 20 working days prior to the submission of the Request for the Final Examination. Approved by: Advisory committee, department head or intercollegiate faculty chair, Research Compliance and Biosafety, and OGAPS. | 11 | Graduate; arrange for cap and gown. | For more information, visit http://graduation.tamu.edu . |
| 6 | Complete residence requirement. | When: Before submitting request to schedule final examination. Approved by: OGAPS | | | |
| 7 | Apply for degree; pay graduation fee. | When: During the first week of the final semester; see OGAPS calendar for deadlines. | | | |

Note: Once formal coursework is complete, you must be continuously registered until all degree requirements have been met. This includes submission and clearance of the dissertation or record of study. See Continuous Registration Requirements (p. 27).

Program Requirements

Program Requirements

- Student's Advisory Committee (p. 1949)
- Degree Plan (p. 1950)
- Transfer of Credit (p. 1950)
- Research Proposal (p. 1951)
- Examinations (p. 1951)
 - Preliminary Examination (p. 1951)
 - Final Examination/Dissertation Defense (p. 1952)
- Dissertation (p. 1952)

Student's Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student's advisory committee will consist of **no fewer than four members of the graduate faculty** representative of the student's several fields of study and research, where the chair or co-chair must be from the student's

department (or intercollegiate faculty, if applicable), and **at least one or more of the members must have an appointment to a department other than the student's major department.** The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student's committee.

The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student's advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student's advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student's academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student's advisory committee without a co-chair for up to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.

The committee members' signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student's research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student's advisory committee will evaluate the student's previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. **The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student's college and no later than 90 days prior to the preliminary examination.**

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website <http://ogsdpss.tamu.edu>. A minimum of 64 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master's degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 64 hours. A student who has completed a baccalaureate degree but not a master's degree

will be required to complete a 96-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 96 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student's advisory committee if it is deemed necessary to correct deficiencies in the student's academic preparation. No changes can be made to the degree plan once the student's Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

For non-distance degree programs, no more than four courses may be taken by distance education without approval of OGAPS and no more than 50 percent of the non-research credit hours required for the program may be completed through distance education courses.

To receive a graduate degree from Texas A&M University, students must earn one-third or more of the credits through the institution's own direct instruction. This limitation also applies to joint degree programs.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student's advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for "internship" coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. **Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit.** Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research.

As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student's advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student's advisory committee, the head of the student's major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website <http://rcb.tamu.edu>.

Examinations

Preliminary Examination for Doctoral Students

The student's major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student's advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format

The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

- a mastery of the subject matter of all fields in the program;
- an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
- an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student's department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student's preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

- offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.
- assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.
- forward the marked examination to the chair of the student's advisory committee within one week after the examination.

Preliminary Examination Scheduling

Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

- Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.
- An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.
- Student's cumulative GPR is at least 3.000.
- Student's degree plan GPR is at least 3.000.
- At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student's department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination

Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student's examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student's examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student's department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination

Upon approval of the student's examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retest. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days of the exam that was not passed.

Final Examination for Doctoral Students

The candidate for the doctoral degree must pass a final examination by deadline dates announced in the "Office of Graduate and Professional Studies Calendar" each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been **admitted to candidacy** and their current official cumulative and degree plan GPAs are 3.00 or better.

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies **a minimum of 10 working days in advance** of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student's advisory committee will conduct this examination. **The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student's advisory committee, and all concerned have had adequate time to review the document.** Whereas the final examination may cover the broad field of the candidate's training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student's department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. **The Office of Graduate and Professional Studies must be notified in writing of any cancellations.**

A positive evaluation of the final exam by all members of a student's advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, **which must be the original work of the candidate.** Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation

are available in the *Thesis Manual*, which is available online at <http://ogaps.tamu.edu>.

After successful defense and approval by the student's advisory committee and the head of the student's major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, <http://ogaps.tamu.edu>. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website <http://ogaps.tamu.edu>.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student's department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Additional Requirements

- Residence (p. 1953)
- Time Limit (p. 1953)
- Continuous Registration (p. 1953)
- Admission to Candidacy (p. 1953)
- Languages (p. 1953)
- 99-Hour Cap on Doctoral Degree (p. 1953)
- Application for Degree (p. 1954)

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master's degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan. See Registration. (p. 27)

See Residence Requirements (p. 21).

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements (p. 27).

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691 or 791.
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination (written and oral portions),
4. submitted an approved dissertation proposal,
5. met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with

legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than \$1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

- Biomedical Sciences
- Biochemistry
- Microbiology
- Genetics
- Toxicology
- Nutrition Sciences
- Community Clinical Psychology
- School Psychology
- Veterinary Pathobiology
- Clinical Psychology
- Counseling Psychology
- Medical Sciences
- Health Services Research
- Health Promotion and Community Health Sciences
- Epidemiology and Environmental Health
- Oral Biology

The hour limit for these majors is 130 doctoral hours

Application for Degree

For information on applying for your degree, please visit the Graduation (p. 26) section.

APPENDICES

- Family Educational Rights and Privacy Act (FERPA) (p. 1955)
- Hazing Law Summary (Education Code) (p. 1956)
- International Agreements (p. 1957)
- Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act) (p. 1960)
- Notification for Students Pursuing an Occupational License (p. 1960)
- Rules and Regulations for Determining Residence Status (p. 1961)

Family Educational Rights and Privacy Act

Texas A&M University informs students annually of the Family Educational Rights and Privacy Act. This Act, with which the University intends to comply fully, is intended to protect the privacy of education records, to establish the rights of students to inspect and review their education records and to provide guidelines for the correction of inaccurate or misleading data through informal and formal hearings. Students also have the right to file complaints with the Family Policy Compliance Office of the Department of Education in Washington, D.C. concerning alleged failures by the University to comply with the Act.

The Family Educational Rights and Privacy Act (FERPA) is a federal law that provides minimum standards for the management of student education records for universities receiving funds made available under any federal program administered by the U.S. Commissioner of Education. The Act provides, among other things, that an institution will maintain the confidentiality of student education records, and students will have the right to inspect their own education records.

This Policy is designed to meet FERPA provisions. Texas A&M University is committed to the good faith implementation of this Policy. Questions may be emailed to ferpa@tamu.edu.

If a student, the parent of a student, or any other individual has a complaint that an official of the University is violating FERPA, and the complaint cannot be satisfactorily resolved within the University, that person has the right to file a complaint with the Department of Education by contacting:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Ave., S.W.
Washington, D.C. 20202

For the purposes of this Policy, Texas A&M University has used the following definitions of terms:

Student. An individual who has been in attendance at the University and for whom the University maintains education records.

Education Records. Any records (in handwriting, print, tapes, film or other medium) maintained by the University, an employee of the University or agent of the University that are directly related to a student.

Directory Information. Information contained in an education record of a student that would not generally be considered harmful or an invasion of privacy if disclosed. The University has designated the following items as directory information, thus they may be made public unless the student submits a request to withhold any or all of this information: the

student's name; UIN (Universal Identification Number); local address; permanent address; email address; local telephone number; permanent telephone number; dates of attendance; program of study; classification; previous institution(s) attended; degrees, honors, and awards received; participation in officially recognized activities and sports; medical residence location (Health Science Center students); and medical residence specialization (Health Science Center students).

Currently-enrolled students may request to withhold any or all directory information by going to the My Record tab in the Howdy (<https://howdy.tamu.edu>) portal, clicking on "Withhold Directory Information" in the My Information channel, and submitting a completed form.

Directory information may be released unless a Withhold Directory Information request is submitted by the student. The request remains in effect until the student revokes it or is deceased. Only currently-enrolled students may request directory information be withheld.

Directory holds will not prevent information from student education records from being released to University officials, authorized agents acting on behalf of the University, and to others with a legitimate educational interest under certain conditions (e.g., for the receipt of financial aid, to other institutions to which a student has applied, in connection with health and safety emergencies) without prior consent. Additionally, students may not use directory holds to remain anonymous in a class.

Statement of Rights

Texas A&M University encourages students to exercise all of their rights under the Family Educational Rights and Privacy Act (20 U.S.C. 1232g). Operating under the premise that the educational process is a cooperative venture between a student and the University, we emphasize the following rights of eligible students:

1. The right to inspect and review, with certain limited exceptions, the student's educational records, including the right to receive explanations and interpretations of the records and to obtain copies of the records when such are needed to allow the student to effectively exercise his/her right of inspection and review. Conduct files maintained by the Student Conduct Office will be administered under its rules;
2. consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.

One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A *school official* is a person or entity: (a) employed by the university or the university system in an administrative, supervisory, academic or research, or support staff position; (b) serving on a university governing body or duly authorized panel or committee; or (c) employed by or under contract to the university to perform a special task, function, or service for the university.

A school official has a *legitimate educational interest* if the information requested is necessary for that official to (a) perform appropriate tasks that are specified in his/her position description or in the performance of regularly assigned duties by a lawful supervisor; (b) fulfill the terms of a contractual agreement; (c) perform a task related to a student's education; (d) perform a task related to the discipline of a student; or (e) provide a service or benefit relating to the student

or student's family, such as health care, counseling, financial aid, job placement, or former student-related activities.

Disclosure to a school official having a legitimate educational interest does not constitute university authorization to transmit, share, or disclose any or all information received to third parties unless such disclosure is permitted or required by law.

3. the right to correct a student's education records when the records are inaccurate, misleading or otherwise in violation of FERPA;
4. the right to report violations of FERPA to the Department of Education;
5. the right to be informed about FERPA rights.

All the rights and protections given students under FERPA belong to the student. However, information in student records may be provided to parents/legal guardians without the written consent of the student if the eligible student is a financial dependent of his or her parents/legal guardians as defined under Section 152 of the Internal Revenue Code of 1954.

Records Not Available for Information and Review

Students shall have access to all education records concerning them maintained by the University with the exception of the following:

1. A personal record kept by a university faculty or staff member which meets the following tests:
 - a. It is in the personal possession of the individual who made it.
 - b. Information contained in it has never been revealed or made available to any other person except the maker's temporary substitute.
2. An employment record which is used in relation to a student's employment by the University, except where an individual in attendance at the University is employed as a result of his or her status as a student.
3. Records relating to a student which are created or maintained by a physician, psychiatrist, psychologist or other recognized professional or para-professional acting in his or her professional or para-professional capacity or assisting in that capacity which are used in connection with the provision of treatment to a student and are not disclosed to anyone other than the individuals providing the treatment.
4. Financial records and statements of a student's parents.
5. Confidential letters and statements of recommendation which were placed in the education records of a student prior to January 1, 1975.
6. Confidential letters and statements of recommendation which were placed in the education records of a student on or after January 1, 1975, if the student has waived his or her right to inspect and review the letters or statements.
7. Records concerning admissions to an academic component of the University which the student has never attended.

Any questions concerning FERPA should be directed to the Office of the Registrar.

Hazing Law Summary (Education Code)

Education Code § 51.936 requirement to publish a summary of Education Code Ch. 37, subchapter F. Hazing in the University Catalog

The following is a summary of Chapter 37, subchapter F. (§§ 37.151-157) of the Texas Education Code, which prohibits hazing in Texas public or private high schools. Texas Education Code §51.936 applies Ch. 37's prohibition on hazing to institutions of higher education. This summary of Chapter 37 is provided as required by § 51.936(d).

Summary

Hazing is a criminal violation under Texas law. A person may be found guilty of criminal conduct for hazing, encouraging hazing, permitting hazing, or having knowledge of the planning of hazing incidents and failure to report in writing his/her knowledge to the Dean of Students.

Both failing to report hazing and hazing that does not result in serious bodily injury are Class B misdemeanors. Hazing that results in serious bodily injury is a Class A misdemeanor. Hazing resulting in a death is a state jail felony. An organization found guilty of hazing may be fined \$5,000 to \$10,000 or, for incidents causing personal injury or property damage, an amount double the loss or expenses incurred because of the hazing incident. It is not a defense to prosecution that the person hazed consented to the hazing activity.

Any person reporting a specific hazing incident to the Dean of Students or other appropriate institutional official is immune from civil and criminal liability unless the report is in bad faith or malicious.

The state law does not limit or affect an educational institution's right to enforce its own penalties against hazing.

The Education Code defines hazing as "any intentional, knowing, or reckless act occurring on or off the campus of an educational institution, by one person or acting with others, directed against a student, that endangers the mental or physical health or safety of a student for the purpose of pledging, being initiated into, affiliating with, holding office in, or maintaining membership in an organization." The statute contains a list of conduct which constitutes hazing.

In order to report suspected incidents of hazing, contact the Office of the Dean of Student Life or the police department at your respective campus.

Offices of the Dean of Student Life
White Creek Student Life 3 (Bldg. #0072) - Room 101
College Station, TX 77843-1254
(979) 845-3111
<http://stophazing.tamu.edu/report>

Student Affairs
Suite 101, Seibel Student Services Center
Galveston, TX 77554
(409) 740-4736
<https://cm.maxient.com/reportingform.php?TAMUGalveston>

Office of Student Affairs
Education City
Doha, Qatar
+974.4423.0047
dsa@qatar.tamu.edu

International Agreements

To promote the internationalization of the University and create significant global opportunities for our students and faculty, Texas A&M has active, formal agreements with foreign institutions as well as Reciprocal Educational Exchange Programs (REEP). For information regarding international partnerships, visit the Global Partnership Services (<http://globalsupport.tamu.edu>) website, call Public Partnership & Outreach at 979.845.3099, or email globalsupport@tamu.edu. For updated information on global engagement or to search a real-time database for active agreements, please visit globalsupport.tamu.edu.

All current (as of March 1, 2019) agreements with foreign institutions are as follows:

Argentina

Universidad del Salvador¹ (2014)

Australia

Curtin University of Technology (2016)

Queensland University of Technology¹ (2001)

University of Adelaide¹ (2010)

University of New South Wales¹ (2014)

Australian Defence Academy

University of Queensland¹ (2001)

University of Sydney¹ (2016)

University of Western Australia (2001)

Austria

Karl-Franzens-Universität Graz (2017)

MCI Management Center Innsbruck¹

Wirtschaftsuniversität Wien¹ (2001)

Vienna University of Economics and Business

Azerbaijan

Azerbaijan State Agricultural University (2018)

Bangladesh

Bangladesh University of Engineering and Technology (2014)

North South University (2018)

Belgium

Université Libre Internationale (Bruxelles) (2016)

Université de Mons (2014)

Université of Liège¹ (2016)

Bolivia

The Autonomous State Government of Santa Cruz (2015)

Brazil

Fundação Getulio Vargas¹ (2015)

Produttore Consutores Associados (2014)

Universidade de São Paulo (2007)

Universidade de São Paulo en Sao Carlos¹ (2014)

Universidade Estadual de Maringá (2008)

Universidade Federal de Pernambuco¹ (2011)

Universidade Federal do Rio de Janeiro (UFRJ)¹ (2011)

Universidade federal do Ceará (2001)

Chile

Pontificia Universidad Católica de Chile - Department Ingeniería y Gestión de la Construcción, Facultad de Ingeniería (2011)

China

Beihai Haicheng No 1 Experimental Primary School (2019)

Beihang University (2014)

Beijing Jiaotong University¹ (2009)

Capital University of Economics and Business¹ (2015)

China Foreign Affairs University¹ (2014)

Chinese Academy of Sciences (2016)

Fujian Agriculture & Forestry University (2012)

Harbin Institute of Technology (2014)

Hong Kong University of Science and Technology¹ (2001)

Nanchang University (2016)

Ocean University of China (2007)

Peking University¹ (1998)

Renmin University of China (2015)

Shanghai Institute for International Studies¹ (2010)

Shanghai Jiao Tong University¹ (2002)

Southeast University¹ (2007)

Southwest University (2015)

Southwestern University of Finance and Economics¹ (2011)

Tianjin University (2007)

Tongji University (2014)

Tsinghua University¹ (2004)

University of Electronic and Science and Technology of China (2014)

University of Michigan, Shanghai Jiao Tong University, Joint Institute¹ (2018)

University of Nottingham Ningbo¹ (2014)

Wuhan University (2014)

Xiaman University School of Public Health (2016)

Qingdao National Laboratory for Marine Science and Technology Atmospheric Research (2017)

Colombia

Universidad Autónoma de Bucaramanga (2014)

Universidad de los Andes (1995)

Universidad Del Magdalena (2011)

Universidad Industrial de Santander (1987)

Cyprus

University of Cyprus (2014)

Czech Republic

Prague University of Economics¹ (2016)

Denmark

Copenhagen Business School¹ (2002)

Danmarks Tekniske Universitet¹ (DTU) (2016)

Ecuador

Universidad San Francisco de Quito¹ (2004)

University of Cuenca (2015)

Dirección General de Intereses Marítimos (2001)

Egypt

Arab Academy for Science, Technology and Maritime Transport (2016)

Beni-Suef University (2016)

Finland

Aalto University¹ (2016)

Hanken Svenska Handelshögskolan¹ (2015)

France

École de Management De Lyon (EMLYON) Business School¹ (2003)

Ecole Nationale d'Ingénieurs de Saint-Etienne (ENISE) (2003)

Ecole Nationale Supérieure D'Arts Et Metiers (ENSAM) (2003)

Ecole Nationale Vétérinaire de Toulouse (2017)

Ecole Spéciale des Travaux Publics, du Bâtiment et de l'Industrie (2003)

EDHEC Business School¹ (1998)

Federation Des École Supérieures d'ingénieurs en Agriculture (FESIA)¹ (1998)

Université de Strasbourg¹ (2010)

Université of Caen¹ (2004)

Germany

Eberhard Karls Universität Tübingen¹ (2002)

European Business School Universität¹ (2008)

German Consortium with Freie, Humboldt, Potsdam Universities¹ (2011)

Helmut Schmidt Universität¹ (2012)

German Aerospace Center (2018)

Munich Business School (2012)

Technische Universität Clausthal¹ (2002)

Universität Hohenheim¹ (2011)

WHU Otto Beisheim School of Management - Koblenz¹ (1986)

Greece

Aristotle University of Thessaloniki (2011)

Ethniko Metsovio Polytechnio (NTUA) (2015)

University of Ioannina (2014)

India

Bangalore University, Jnanabharathi Campus (2016)

Christ University (2016)

Cochin University of Science and Technology (2015)

Indian Institute of Management Bangalore (IIMB)¹ (2001)

Indian Institute of Technology Hyderabad (IITH) (2014)

Indian Institute of Management Kozhikode (IIMK)¹ (2016)

Indian Institute of Technology Kanpur (2013)

Indian Institute of Technology Madras¹ (2018)

Indian Institute of Petroleum and Energy (2018)

Indian Institute of Technology Kharagpur (2015)

Jindal School of International Affairs¹ (2012)

Jindal Global University (2016)

Pandit Deendayal Petroleum University (2010)

RICS School of Built Environment Amity University (2016)

SDM Institute for Management Development¹ (2008)

University of Agricultural Sciences – Dharwad (2003)

Indonesia

Institut Teknologi Bandung (2014)

University Gadjah Mada (2014)

Ireland

University College Dublin, National University of Ireland¹ (2012)

University of Limerick¹ (2016)

Israel

University of Haifa (2015)

Italy

Politecnico di Torino (2014)

Università Bocconi¹ (2014)

Università degli Studi di Trieste (2014)

Università degli Studi di Torino (2014)

Università degli Studi 'Ca' Foscari' di Venezia (2015)

Università degli Studi di Bologna 'Alma Mater Studiorum'¹ (2016)

Università degli Studi di Roma Tre (2018)

Japan

Kwansei Gakuin University¹ (2011)

Kyushu University (2015)

Osaka University¹ (2001)

Saitama University (2015)

Tohoku University¹ (2012)

Waseda University (2015)

Jordan

German Jordanian University (2015)

Jordan University of Science and Technology (2018)

Kazakhstan

L.N. Gumilyov Eurasian National University (2015)

Republic of Korea

Chungnam National University¹ (2015)

Inha University (2015)

Korea Advanced Institute of Science and Technology (2013)

Seoul National University¹ (1997)

Soonchunhyang University¹ (1999)

Lebanon

American University of Beirut (2018)

Mexico

Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV) (2015)

Instituto Tecnológico Y de Estudios Superiores De Monterrey¹ (2002)

Instituto Tecnológico y de Estudios Superiores de Occidente (2012)

National Council of Science and Technology (1996)

Universidad Autónoma de Nuevo León (2016)

Universidad de Guadalajara (2004)

The State of Yucatan (2014)

Universidad Juárez Autónoma de Tabasco¹ (2016)

Universidad Panamericana (2019)

Mongolia

Mongolian Prosecutors Office (2016)

Netherlands, The

Erasmus Universiteit Rotterdam¹ (2012)

Tilburg University¹ (2012)

Universiteit Maastricht¹ (1998)

Vrije Universiteit Amsterdam (2018)

New Zealand

Victoria University of Wellington¹ (2008)

Norway

BI Norwegian School of Management¹ (2001)

Norwegian University of Science and Technology (2002)

Peru

Universidad Nacional de Ingeniería (2014)

Poland

Wroclaw University of Science and Technology (2016)

Qatar

Qatar University (2005)

Hamad Bin Khalifa University (2017)

Romania

Universitatea Tehnica din Cluj-Napoca (2014)

Rwanda

University of Rwanda (2018)

Saudi Arabia

King Abdullah University of Science and Technology (2015)

Senegal

Espaces de Coproduction des Offres Populaires Pour

L'Environnement et le Développement en Afrique (ECOPOP) (2017)

Singapore

National University of Singapore¹ (1996)

Singapore University of Technology and Design¹ (2018)

South Africa

Department of Rural Development & Agrarian Reform (2015)

Spain

Abat Oliba CEU University¹ (2013)

Universidad Autónoma de Barcelona¹ (2005)

Universidad Carlos III de Madrid¹ (1998)

Universidad de Jaén¹ (2016)

Universitat Pompeu Fabra¹ (2000)

Sweden

Jönköping International Business School¹ (2001)

Switzerland

Université De Lausanne¹ (2001)

Taiwan

National Taiwan University¹ (2001)

National Cheng Kung University (2018)

National Chung Hsing University (2018)

Thailand

Kasetsart University (2016)

Turkey

Koc University¹ (2015)

Ukraine

Institute for Experimental and Clinical Veterinary Medicine (2016)

I.I. Schmalhausen Institute of Zoology (2018)

National Academy of Agrarian Science of Ukraine (2018)

National University of Life and Environmental Sciences of Ukraine (2018)

United Arab Emirates

Khalifa University of Science, Technology and Research (KUSTAR) (2015)

United Kingdom

Lancaster University¹ (2013)

Liverpool John Moores University (2017)

Swansea University¹ (2010)

University of Aberdeen (2015)

University of Leicester¹ (2007)

University of Nottingham¹ (2002)

¹Includes a Reciprocal Educational Exchange Program (REEP)

Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act)

In compliance with federal law, the following information is maintained and available for Texas A&M University and its separate campuses through the Clery Annual Reports webpage on the Texas A&M University Office of Risk, Ethics, and Compliance website. The Texas A&M University Annual Security Reports and Annual Fire Safety Reports are available and include information on campus safety and security policies and statistics. Examples of policies include: reporting crimes and emergencies, descriptions of campus law enforcement, health and safety notifications, crime awareness and prevention, security of campus facilities and residence halls, alcohol and drug policies, and fire safety systems for on-campus student housing facilities.

The Annual Security Reports and Annual Fire Safety Reports can be found at: <https://urc.tamu.edu/clery-act/clery-annual-reports/>.

For a paper copy of the reports, please contact the respective campus as indicated in the following: https://urc.tamu.edu/media/519551/notification_security_fire_reports.pdf.

Notification for Students Pursuing an Occupational License

Please be advised that Texas A&M offers many programs that lead to an occupational license as defined under Texas Occupations Code 58.001. Licensing authorities may have guidelines concerning prior criminal convictions that would make an individual ineligible for issuance of a given license. Applicants are encouraged to review all eligibility requirements related to degrees resulting in a license. Note the following:

- An individual who has been convicted of an offense may be ineligible for issuance of an occupational license.
- Licensing authorities must establish and make available guidelines explaining why a particular offense is considered a basis for ineligibility for a particular license and other criterion that may affect the decision to grant or withhold a license.
- Local or county licensing authorities may establish additional guidelines related to criminal history. Applicants should contact their local or county licensing authority for more information.
- An individual has the right to request a criminal history evaluation letter regarding their eligibility for a license issued under Texas Occupations Code 53.102.
- Questions related to eligibility requirements should be directed to the individual licensing authorities.

Rules and Regulations for Determining Residence Status

Determination of Residency for Tuition Purposes

In accordance with Texas Higher Education Coordinating Board Rules and pursuant to Texas Education Code, a student's status as a resident, nonresident or international (foreign) student for tuition purposes will be determined in the Office of Admissions prior to enrollment. Students must be prepared to pay tuition and other required fees by specified due dates.

Students with a status of permanent resident of the United States are not automatically eligible as a Texas state resident for tuition purposes.

Students who have knowledge of an error in their residency status for tuition purposes are responsible for notifying the Office of the Registrar and may be required to submit the Core Residency Questions form, which is available for download on the Office of the Registrar (<http://registrar.tamu.edu>) website in order to amend their status.

Questions should be directed to the Residency Officer at (979) 845-1085 or email residency@tamu.edu. Complete rules and regulations are available on the Texas Higher Education Coordinating Board website.

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| PERF - Performance Studies | 1782 |
| Performance Studies | 1096 |
| Performance Studies - MA | 1096 |
| PERI - Peridontics | 1783 |
| Periodontics | 551 |
| Periodontics - Certificate | 552 |
| PETE - Petroleum Engineering | 1788 |
| Petroleum Engineering | 902 |
| Petroleum Engineering - MENG | 903 |
| Petroleum Engineering - MS | 906 |
| Petroleum Engineering - PHD | 910 |
| Petroleum Geoscience - Certificate | 964 |
| PHAR - Pharmacy | 1792 |
| Pharmacy - PharmD | 1195 |
| PHEB - Public Hlth Epide Biost | 1802 |
| PHEO - Public Hlth Enviro Occu | 1805 |
| PHIL - Philosophy | 1807 |
| Philosophy - MA | 1101 |
| Philosophy - PHD | 1104 |
| Philosophy and Humanities | 1100 |
| PHPM - Public Hlth Pol & Mgmt | 1809 |
| PHYS - Physics | 1813 |
| Physics - MS | 1299 |

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| Physics - PHD | 1304 |
| Physics and Astronomy | 1281 |
| Physiology of Reproduction - MS | 218 |
| Physiology of Reproduction - PHD | 222 |
| PLAN - Urban Planning | 1816 |
| Plant Breeding - MS | 304 |
| Plant Breeding - MS | 390 |
| Plant Breeding - PHD | 308 |
| Plant Breeding - PHD | 395 |
| Plant Pathology - MS | 338 |
| Plant Pathology - PHD | 342 |
| Plant Pathology and Microbiology | 337 |
| PLPA - Plant Pathology | 1818 |
| Political Science | 1110 |
| Political Science - MA | 1112 |
| Political Science - PHD | 1115 |
| POLS - Political Science | 1820 |
| POSC - Poultry Science | 1823 |
| Poultry Science | 348 |
| Poultry Science - MAGR | 349 |
| Poultry Science - MS | 352 |
| Poultry Science - PHD | 356 |
| Prevention Science - Certificate | 147 |
| PROS - Prosthodontics | 1824 |
| Prosthodontics - Certificate | 540 |
| PSAA - Public Service & Admin | 1828 |
| PSYC - Psychology | 1833 |
| Psychological and Brain Sciences | 1121 |
| Psychology - MS | 1135 |
| Psychology - PHD | 1139 |
| Public Health Certificate | 1215 |
| Public Health Sciences | 553 |
| Public Health Sciences - DPH | 1209 |
| Public Management - Certificate | 1011 |
| Public Service and Administration | 992 |
| Public Service and Administration - EMPSA | 993 |
| Public Service and Administration - MPSA | 995 |
| Public Service and Administration - MPSA/PHD Collaborative Program | 584 |
| Public Service and Administration PSAA/Health Services Research EDAD - MPS/PHD, Collaborative Program | 997 |
| Public Service and Administration PSAA/Health Services Research HRSA - MPS/PHD, Collaborative Program | 1004 |

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| Qatar Engineering Programs | 1942 |
| Quality Engineering for Regulated Medical Technologies - Certificate ... | 736 |
| Quantitative Finance - MS | 1279 |

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| RDNG - Reading | 1836 |
| Recreation and Youth Development - MRYD | 366 |
| Recreation, Park and Tourism Sciences | 362 |
| Recreation, Park and Tourism Sciences - MS | 368 |
| Recreation, Park and Tourism Sciences - PHD | 372 |
| Refund Policy | 1498 |
| Registration and Academic Status | 27 |
| Regulatory Science in Food Systems - Certificate | 411 |
| Remote Sensing - Certificate | 148 |
| RENr Renewable Natural Resrces | 1837 |
| RPTS - Rec, Park & Tourism Sci | 1838 |
| Rules and Regulations for Determining Residence Status | 1961 |
| RUSS - Russian | 1840 |

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|---------------------------------------------------------------------------------------|------|
| Safety Engineering - Certificate | 707 |
| Safety Engineering - MS | 702 |
| SCEN - College of Science | 1840 |
| School of Law | 36 |
| School of Law | 1012 |
| School of Public Health | 41 |
| School of Public Health | 1196 |
| School Psychology - PHD | 618 |
| Science and Technology Journalism - MS | 1333 |
| Science, Technology, Engineering and Mathematics (STEM) Education - Certificate | 682 |
| SCMT - Supply Chain Mgmt | 1840 |
| SCSC - Soil and Crop Sciences | 1841 |
| SEFB - Special Ed. Field Based | 1844 |
| SENG - Safety Engineering | 1845 |
| SOCI - Sociology | 1845 |
| Sociology | 1145 |
| Sociology - MS | 1146 |
| Sociology - PHD | 1151 |
| Soil and Crop Sciences | 379 |
| Soil Science - MS | 401 |
| Soil Science - PHD | 405 |
| SOPH - School of Public Health | 1848 |

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| Space Life Sciences - Certificate | 148 | Veterinary Medicine - DVM | 1337 |
| Special Education - MED | 624 | Veterinary Pathobiology | 1348 |
| Special Education - MS | 625 | Veterinary Physiology and Pharmacology | 1350 |
| SPED - Special Education | 1848 | Veterinary Public Health Epidemiology - MS | 1342 |
| SPMT - Sport Management | 1850 | Veterinary Small Animal Clinical Sciences | 1351 |
| Sport Management - MS | 658 | VIBS - Vet Integrative Biosci. | 1865 |
| SPSY - School Psychology | 1852 | Visualization | 469 |
| STAT - Statistics | 1853 | Visualization - MFA | 470 |
| Statistics | 1310 | Visualization - MS | 473 |
| Statistics - MS | 1311 | VIZA - Visualization | 1869 |
| Statistics - PHD | 1315 | VLCS Vet Large Animal Clin. Sc | 1872 |
| Supply Chain and Operations - Certificate | 492 | VMID - Vet Medicine-Interdisc. | 1873 |
| SURG - Surgery | 1856 | VPAR - Veterinary Parasitology | 1875 |
| Sustainable Urbanism - Certificate | 468 | VPAT - Veterinary Pathology | 1876 |
| SYEN - Systems Engineering | 1863 | VSCS Vet Small Animal Clin. Sc | 1877 |
| Systems Engineering - MEng | 699 | VTMI - Veterinary Microbiology | 1878 |
| T | | VTPB - Veterinary Pathobiology | 1879 |
| TAMU - TAMU Study Abroad/Consortium | 1863 | VTPP - Vet Physiology & Pharm. | 1880 |
| TCMT - Technical Management | 1863 | W | |
| Teaching, Learning and Culture | 662 | Water Management and Hydrological Science - MS | 132 |
| Technical Management - METM | 823 | Water Management and Hydrological Science - MWM | 135 |
| TEED - Teacher Education | 1864 | Water Management and Hydrological Science - PHD | 138 |
| Texas A&M Catalogs | 1 | WFSC Wildlife & Fisheries Sci. | 1883 |
| Texas A&M Tuition and Required Fees | 1493 | WGST - Women's & Gender Studies | 1885 |
| Texas A&M University at Galveston | 1888 | Wildlife and Fisheries Sciences | 411 |
| Texas A&M University at Qatar | 1933 | Wildlife and Fisheries Sciences - PHD | 419 |
| Texas A&M University Qatar Campus | 42 | Wildlife and Fisheries Sciences -MS | 415 |
| Toxicology - MS | 122 | Wildlife Science - MWSC | 425 |
| Toxicology - PHD | 126 | WMHS Water Mgmt & Hydrol. Sci. | 1886 |
| Transportation Planning - Certificate | 148 | Women's and Gender Studies - Certificate | 1025 |
| Tuition, Fees and Other Financial Information | 1488 | | |
| U | | | |
| University Information | 1501 | | |
| University Policies | 1503 | | |
| Urban and Regional Planning - MUP | 459 | | |
| Urban and Regional Science - PHD | 463 | | |
| URSC - Urban Science | 1865 | | |
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| Vector Biology and Vector-Borne Disease Response in Human and Animal Systems - Certificate | 289 | | |
| Veterinary Integrative Biosciences | 1339 | | |
| Veterinary Large Animal Clinical Sciences | 1346 | | |